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SEQUENCE LISTING

<110> Adra, Chaker

<120> GRANULOCYTE SUBTYPE-SELECTIVE RECEPTORS AND ION CHANNELS AND USES THEREOF

<130> A0852.70000W000

<140> Not yet assigned

<141> 2005-03-03

<150> 60/549,865

<151> 2004-03-03

<160> 31

<170> PatentIn version 3.3

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<212> DNA

<213> Homo sapiens

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Met Asp Ala Ile His Ile Gly Met Ser Ser Thr Pro Leu

1

5

10

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Val Lys His Thr Ala Gly Ala Gly Leu Lys Ala Asn Arg Pro Arg Val					
atg tcc aag agt ggg cac agc aac gtc aca att gac aaa gtc gat ggc	30	35	40	45	205
Met Ser Lys Ser Gly His Ser Asn Val Arg Ile Asp Lys Val Asp Gly					
ata tac cta ctc tac ctg caa gac ctg tgg acc aca gtt atc gac atg	50	55	60		253
Ile Tyr Leu Leu Tyr Leu Gln Asp Leu Trp Thr Thr Val Ile Asp Met					
aag tgg aga tac aaa ctc acc ctg ttc gct gcc act ttt gtc atg acc	65	70	75		301
Lys Trp Arg Tyr Lys Leu Thr Leu Phe Ala Ala Thr Phe Val Met Thr					
tgg ttc ctt ttt gga gtc atc tac tat gcc atc gcg ttt att cat ggg	80	85	90		349
Trp Phe Leu Phe Gly Val Ile Tyr Tyr Ala Ile Ala Phe Ile His Gly					
gac tta gaa ccc gat gag ccc att tca aat cat acc ccc tgc atc atg	95	100	105		397
Asp Leu Glu Pro Asp Glu Pro Ile Ser Asn His Thr Pro Cys Ile Met					
aaa gtg gac tct ctc act ggg gcg ttt ctc ttt tcc ctg gaa tcc cag	110	115	120	125	445
Lys Val Asp Ser Leu Thr Gly Ala Phe Leu Phe Ser Leu Glu Ser Gln					
aca acc att ggc tat gga gtc cgt tcc atc aca gag gaa tgt cct cat	130	135	140		493
Thr Thr Ile Gly Tyr Val Arg Ser Ile Thr Glu Glu Cys Pro His					
gcc atc ttc ctg ttg gtt gct cag ttg gtc atc acg acc ttg att gag	145	150	155		541
Ala Ile Phe Leu Leu Val Ala Gln Leu Val Ile Thr Thr Leu Ile Glu					
atc ttc atc acc gga acc ttc ctg gcc aaa atc gcc aga ccc aaa aag	160	165	170		589
Ile Phe Ile Thr Gly Thr Phe Leu Ala Lys Ile Ala Arg Pro Lys Lys					
cgg gct gag acc atc aag ttc agc cac tgt gca gtc atc acc aag cag	175	180	185		637
Arg Ala Glu Thr Ile Lys Phe Ser His Cys Ala Val Ile Thr Lys Gln					
aat ggg aag ctg tgc ttg gtc att cag gta gcc aat atg agg aag agc	190	195	200	205	685
Asn Gly Lys Leu Cys Leu Val Ile Gln Val Ala Asn Met Arg Lys Ser					
ctc ttg att cag tgc cag ctc tct ggc aag ctc ctg cag acc cac gtc	210	215	220		733
Leu Leu Ile Gln Cys Gln Leu Ser Gly Lys Leu Leu Gln Thr His Val					
acc aag gag ggg gag cgg att ctc ctc aac caa gcc act gtc aaa ttc	225	230	235		781
Thr Lys Glu Gly Glu Arg Ile Leu Leu Asn Gln Ala Thr Val Lys Phe					
cac gtg gac tcc tcc tct gag agc ccc ttc ctc att ctg ccc atg aca	240	245	250		829
His Val Asp Ser Ser Glu Ser Pro Phe Leu Ile Leu Pro Met Thr					
ttc tac cat gtg ctg gat gag acg agc ccc ctg aga gac ctc aca ccc					877
Phe Tyr His Val Leu Asp Glu Thr Ser Pro Leu Arg Asp Leu Thr Pro					

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Gln Asn Leu Lys Glu Lys Glu Phe Glu Ieu Val Val Leu Leu Asn Ala			
270	275	280	285
act gtg gaa tcc acc agc gct gtc tgc cag agc cga aca tct tat atc			973
Thr Val Glu Ser Thr Ser Ala Val Cys Gln Ser Arg Thr Ser Tyr Ile			
290	295	300	
cca gag gaa atc tac tgg ggt ttt gag ttt gtg cct gtg gta tct ctc			1021
Pro Glu Glu Ile Tyr Trp Gly Phe Glu Phe Val Pro Val Val Ser Leu			
305	310	315	
tcc aaa aat gga aaa tat gtg gct gat ttc agt cag ttt gaa cag att			1069
Ser Lys Asn Gly Lys Tyr Val Ala Asp Phe Ser Gln Phe Glu Gln Ile			
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cgg aaa agc cca gat tgc aca ttt tac tgt gca gat tct gag aaa cag			1117
Arg Lys Ser Pro Asp Cys Thr Phe Tyr Cys Ala Asp Ser Glu Lys Gln			
335	340	345	
caa ctc gag gag aag tac agg cag gag gat cag agg gaa aga gaa ctg			1165
Gln Leu Glu Glu Lys Tyr Arg Gln Glu Asp Gln Arg Glu Arg Glu Leu			
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agg aca ctt tta tta caa cag agc aat gtc tga tcacaggggc gccatccagg			1218
Arg Thr Leu Leu Leu Gln Gln Ser Asn Val			
370	375		
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Ser Gly His Ser Asn Val Arg Ile Asp Lys Val Asp Gly Ile Tyr Leu
35 40 45

- 4 -

Leu Tyr Leu Gln Asp Leu Trp Thr Thr Val Ile Asp Met Lys Trp Arg
50 55 60

Tyr Lys Leu Thr Leu Phe Ala Ala Thr Phe Val Met Thr Trp Phe Leu
65 70 75 80

Phe Gly Val Ile Tyr Tyr Ala Ile Ala Phe Ile His Gly Asp Leu Glu
85 90 95

Pro Asp Glu Pro Ile Ser Asn His Thr Pro Cys Ile Met Lys Val Asp
100 105 110

Ser Leu Thr Gly Ala Phe Leu Phe Ser Leu Glu Ser Gln Thr Thr Ile
115 120 125

Gly Tyr Gly Val Arg Ser Ile Thr Glu Glu Cys Pro His Ala Ile Phe
130 135 140

Leu Leu Val Ala Gln Leu Val Ile Thr Thr Leu Ile Glu Ile Phe Ile
145 150 155 160

Thr Gly Thr Phe Leu Ala Lys Ile Ala Arg Pro Lys Lys Arg Ala Glu
165 170 175

Thr Ile Lys Phe Ser His Cys Ala Val Ile Thr Lys Gln Asn Gly Lys
180 185 190

Leu Cys Leu Val Ile Gln Val Ala Asn Met Arg Lys Ser Leu Leu Ile
195 200 205

Gln Cys Gln Leu Ser Gly Lys Leu Leu Gln Thr His Val Thr Lys Glu
210 215 220

Gly Glu Arg Ile Leu Leu Asn Gln Ala Thr Val Lys Phe His Val Asp
225 230 235 240

Ser Ser Ser Glu Ser Pro Phe Leu Ile Leu Pro Met Thr Phe Tyr His
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Val Leu Asp Glu Thr Ser Pro Leu Arg Asp Leu Thr Pro Gln Asn Leu
260 265 270

Lys Glu Lys Glu Phe Glu Leu Val Val Leu Leu Asn Ala Thr Val Glu
275 280 285

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Ser Thr Ser Ala Val Cys Gln Ser Arg Thr Ser Tyr Ile Pro Glu Glu
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Ile Tyr Trp Gly Phe Glu Phe Val Pro Val Val Ser Leu Ser Lys Asn
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Gly Lys Tyr Val Ala Asp Phe Ser Gln Phe Glu Gln Ile Arg Lys Ser
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Pro Asp Cys Thr Phe Tyr Cys Ala Asp Ser Glu Lys Gln Gln Leu Glu
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atc gtc tct tca gaa gaa gac ggt atg aag ttg gcc acc atg gca gtt 461
 Ile Val Ser Ser Glu Glu Asp Gly Met Lys Leu Ala Thr Met Ala Val
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gca aat ggc ttt ggg aac ggg aag agt aaa gtc cac acc cga caa cag 509
 Ala Asn Gly Phe Gly Asn Gly Lys Ser Lys Val His Thr Arg Gln Gln
 30 35 40

tgc agg agc cgc ttt gtg aag aaa gat ggc cac tgt aat gtt cag ttc 557
 Cys Arg Ser Arg Phe Val Lys Lys Asp Gly His Cys Asn Val Gln Phe
 45 50 55

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Thr Cys Val Asp Ile Arg Trp Arg Trp Met Leu Val Ile Phe Cys Leu	
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gct ttc gtc ctg tca tgg ctg ttt ttt ggc tgt gtg ttt tgg ttg ata	701
Ala Phe Val Leu Ser Trp Leu Phe Phe Gly Cys Val Phe Trp Leu Ile	
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Ala Leu Leu His Gly Asp Leu Asp Ala Ser Lys Glu Gly Lys Ala Cys	
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Val Ser Glu Val Asn Ser Phe Thr Ala Ala Phe Leu Phe Ser Ile Glu	
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Pro Ile Ala Val Phe Met Val Val Phe Gln Ser Ile Val Gly Cys Ile	
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Lys Lys Asp Gly His Cys Asn Val Gln Phe Ile Asn Val Gly Glu Lys	
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Gly Gln Arg Tyr Leu Ala Asp Ile Phe Thr Thr Cys Val Asp Ile Arg	
65	70
75	80

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85 90 95

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Leu Asp Ala Ser Lys Glu Gly Lys Ala Cys Val Ser Glu Val Asn Ser
115 120 125

Phe Thr Ala Ala Phe Leu Phe Ser Ile Glu Thr Gln Thr Thr Ile Gly
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145 150 155 160

Val Val Phe Gln Ser Ile Val Gly Cys Ile Ile Asp Ala Phe Ile Ile
165 170 175

Gly Ala Val Met Ala Lys Met Ala Lys Pro Lys Lys Arg Asn Glu Thr
180 185 190

Leu Val Phe Ser His Asn Ala Val Ile Ala Met Arg Asp Gly Lys Leu
195 200 205

Cys Leu Met Trp Arg Val Gly Asn Leu Arg Lys Ser His Leu Val Glu
210 215 220

Ala His Val Arg Ala Gln Leu Leu Lys Ser Arg Ile Thr Ser Glu Gly
225 230 235 240

Glu Tyr Ile Pro Leu Asp Gln Ile Asp Ile Asn Val Gly Phe Asp Ser
245 250 255

Gly Ile Asp Arg Ile Phe Leu Val Ser Pro Ile Thr Ile Val His Glu
260 265 270

Ile Asp Glu Asp Ser Pro Leu Tyr Asp Leu Ser Lys Gln Asp Ile Asp
275 280 285

Asn Ala Asp Phe Glu Ile Val Val Ile Leu Glu Gly Met Val Glu Ala
290 295 300

Thr Ala Met Thr Thr Gln Cys Arg Ser Ser Tyr Leu Ala Asn Glu Ile
305 310 315 320

Leu Trp Gly His Arg Tyr Glu Pro Val Leu Phe Glu Glu Lys His Tyr

- 11 -

325

330

335

Tyr Lys Val Asp Tyr Ser Arg Phe His Lys Thr Tyr Glu Val Pro Asn
 340 345 350

Thr Pro Leu Cys Ser Ala Arg Asp Leu Ala Glu Lys Lys Tyr Ile Leu
 355 360 365

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 370 375 380

Lys Glu Glu Asp Asp Ser Glu Asn Gly Val Pro Glu Ser Thr Ser Thr
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 Met Lys Glu Thr Arg Gly Tyr Gly Gly
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gat gcc ccc ttc tgc acc cgc ctc aac cac tcc tac aca ggc atg tgg 282
 Asp Ala Pro Phe Cys Thr Arg Leu Asn His Ser Tyr Thr Gly Met Trp
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 Ala Pro Glu Arg Ser Ala Glu Ala Arg Gly Asn Leu Thr Arg Pro Pro
 30 35 40

ggg tct ggc gag gat tgc gga tcg gtg tcc gtg gcc ttc cgg atc acc 378
 Gly Ser Gly Glu Asp Cys Gly Ser Val Ser Val Ala Phe Pro Ile Thr
 45 50 55

atg ctg ctc act ggt ttc gtg ggc aac gca ctg gcc atg ctg ctc gtg 426
 Met Leu Leu Thr Gly Phe Val Gly Asn Ala Leu Ala Met Leu Leu Val

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cag tgg ccc ggg acg tgg tgc ttc atc agc acc ggg cga ggg ggc aac Gln Trp Pro Gly Thr Trp Cys Phe Ile Ser Thr Gly Arg Gly Gly Asn			858
205	210	215	
ggg act agc tct tcg cat aac tgg ggc aac ctt ttc ttc gcc tct gcc Gly Thr Ser Ser His Asn Trp Gly Asn Leu Phe Phe Ala Ser Ala			906
220	225	230	
ttt gcc ttc ctg ggg ctc ttg gcg ctg aca gtc acc ttt tcc tgc aac Phe Ala Phe Leu Gly Leu Leu Ala Leu Thr Val Thr Phe Ser Cys Asn			954
235	240	245	
ctg gcc acc att aag gcc ctg gtg tcc cgc tgc cgg gcc aag gcc acg Leu Ala Thr Ile Lys Ala Leu Val Ser Arg Cys Arg Ala Lys Ala Thr			1002
250	255	260	265
gca tct cag tcc agt gcc cag tgg ggc cgc atc acg acc gag acg gcc Ala Ser Gln Ser Ser Ala Gln Trp Gly Arg Ile Thr Thr Glu Thr Ala			1050
270	275	280	
att cag ctt atg ggg atc atg tgc gtg ctg tcg gtc tgc tgg tct ccg Ile Gln Leu Met Gly Ile Met Cys Val Leu Ser Val Cys Trp Ser Pro			1098
285	290	295	
ctc ctg ata atg atg ttg aaa atg atc ttc aat cag aca tca gtt gag Leu Leu Ile Met Met Leu Lys Met Ile Phe Asn Gln Thr Ser Val Glu			1146
300	305	310	

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cac tgc aag aca cac acg gag aag cag aaa gaa tgc aac ttc ttc tta	1194
His Cys Lys Thr His Thr Glu Lys Gln Lys Glu Cys Asn Phe Phe Leu	
315 320 325	
ata gct gtt cgc ctg gct tca ctg aac cag atc ttg gat cct tgg gtt	1242
Ile Ala Val Arg Leu Ala Ser Leu Asn Gln Ile Leu Asp Pro Trp Val	
330 335 340 345	
tac ctg ctg tta aga aag atc ctt ctt cga aag ttt tgc cag atc agg	1290
Tyr Leu Leu Leu Arg Lys Ile Leu Leu Arg Lys Phe Cys Gln Ile Arg	
350 355 360	
tac cac aca aac aac tat gca tcc agc tcc acc tcc tta ccc tgc cag	1338
Tyr His Thr Asn Asn Tyr Ala Ser Ser Ser Thr Ser Leu Pro Cys Gln	
365 370 375	
tgt tcc tca acc ttg atg tgg agc gac cat ttg gaa aga taa	1380
Cys Ser Ser Thr Leu Met Trp Ser Asp His Leu Glu Arg	
380 385 390	
tgaaaagaacg gagttggaca ttttattgca attcctgctt ccctgaattt gcataatttct	1440
tcccacctga gaaggataat tatatatattt aatttggatt atttcttcat ttttatcttt	1500
ttatTTTaaT gattgttttgc ttagtaatac ccatggagat caactttattt attataatcc	1560
atgcctctga atattagagg gtttcttggaa tgggattttg aatatgcatt taagaacgtt	1620
gggaacaattt tcacagatga tgattggagg aaaagtgtatg aaaagaaaga cctgtgttcc	1680
aggagttttc tccaaacttca aacctttacg tgaatcttaa ccaaagtggaa catctttaca	1740
tttcatgata gcttgctttt gcaatatgag tttgaaaaat cagtataagc ttatgtatgg	1800
gaaaagtcaa catattgaga gtgataattc aattaatagg atatgaactt aacgacatata	1860
aaaagataaa cttaacgaca tataaaagca aataaggca ggagggaaatc gtgacaaaaaa	1920
atatttgc ccaattataa ccaatgtttt agagatgttg tgtccctgtg gcttagcatg	1980
gaactaaaaag ttcttaagtct caattcttagt tatgtgtcat ttagtaactc aggaatctgc	2040
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agtgtcataa aaaacaaatt tgaggttgaa tgattagctg ccagtttagag tgataaaaaaa	2160
atccaggttag gccttctgat tcaccatgac caagtcagga tttcttaata tttctttct	2220
ggcagcataat acaaaggcaa aattaataaa taacagttgt tgaataacaa actttattac	2280
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ctaa	2344

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<400> 7

- 14 -

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Leu Asn His Ser Tyr Thr Gly Met Trp Ala Pro Glu Arg Ser Ala Glu
20 25 30

Ala Arg Gly Asn Leu Thr Arg Pro Pro Gly Ser Gly Glu Asp Cys Gly
35 40 45

Ser Val Ser Val Ala Phe Pro Ile Thr Met Leu Leu Thr Gly Phe Val
50 55 60

Gly Asn Ala Leu Ala Met Leu Leu Val Ser Arg Ser Tyr Arg Arg Arg
65 70 75 80

Glu Ser Lys Arg Lys Lys Ser Phe Leu Leu Cys Ile Gly Trp Leu Ala
85 90 95

Leu Thr Asp Leu Val Gly Gln Leu Leu Thr Thr Pro Val Val Ile Val
100 105 110

Val Tyr Leu Ser Lys Gln Arg Trp Glu His Ile Asp Pro Ser Gly Arg
115 120 125

Leu Cys Thr Phe Phe Gly Leu Thr Met Thr Val Phe Gly Leu Ser Ser
130 135 140

Leu Phe Ile Ala Ser Ala Met Ala Val Glu Arg Ala Leu Ala Ile Arg
145 150 155 160

Ala Pro His Trp Tyr Ala Ser His Met Lys Thr Arg Ala Thr Arg Ala
165 170 175

Val Leu Leu Gly Val Trp Leu Ala Val Leu Ala Phe Ala Leu Leu Pro
180 185 190

Val Leu Gly Val Gly Gln Tyr Thr Val Gln Trp Pro Gly Thr Trp Cys
195 200 205

Phe Ile Ser Thr Gly Arg Gly Gly Asn Gly Thr Ser Ser Ser His Asn
210 215 220

Trp Gly Asn Leu Phe Phe Ala Ser Ala Phe Ala Phe Leu Gly Leu Leu
225 230 235 240

Ala Leu Thr Val Thr Phe Ser Cys Asn Leu Ala Thr Ile Lys Ala Leu
245 250 255

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Val Ser Arg Cys Arg Ala Lys Ala Thr Ala Ser Gln Ser Ser Ala Gln
 260 265 270

Trp Gly Arg Ile Thr Thr Glu Thr Ala Ile Gln Leu Met Gly Ile Met
 275 280 285

Cys Val Leu Ser Val Cys Trp Ser Pro Leu Leu Ile Met Met Leu Lys
 290 295 300

Met Ile Phe Asn Gln Thr Ser Val Glu His Cys Lys Thr His Thr Glu
 305 310 315 320

Lys Gln Lys Glu Cys Asn Phe Phe Leu Ile Ala Val Arg Leu Ala Ser
 325 330 335

Leu Asn Gln Ile Leu Asp Pro Trp Val Tyr Leu Leu Leu Arg Lys Ile
 340 345 350

Leu Leu Arg Lys Phe Cys Gln Ile Arg Tyr His Thr Asn Asn Tyr Ala
 355 360 365

Ser Ser Ser Thr Ser Leu Pro Cys Gln Cys Ser Ser Thr Leu Met Trp
 370 375 380

Ser Asp His Leu Glu Arg
 385 390

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 Met Arg Gly Phe Asn Leu 56
 1 5

 ctc ctc ttc tgg gga tgt tgt gtt atg cac agc tgg gaa ggg cac ata 104
 Leu Leu Phe Trp Gly Cys Cys Val Met His Ser Trp Glu Gly His Ile
 10 15 20

aga ccc aca cgg aaa cca aac aca aag ggt aat aac tgt aga gac agt 152
 Arg Pro Thr Arg Lys Pro Asn Thr Lys Gly Asn Asn Cys Arg Asp Ser
 25 30 35

acc ttg tgc cca gct tat gcc acc tgc acc aat aca gtg gac agt tac 200

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Thr	Leu	Cys	Pro	Ala	Tyr	Ala	Thr	Cys	Thr	Asn	Thr	Val	Asp	Ser	Tyr	
40					45				50							
tat tgc gct tgc aaa caa ggc ttc ctg tcc agc aat ggg caa aat cac															248	
Tyr	Cys	Ala	Cys	Lys	Gln	Gly	Phe	Leu	Ser	Ser	Asn	Gly	Gln	Asn	His	
55				60					65				70			
ttc aag gat cca gga gtg cga tgc aaa gat att gat gaa tgt tct caa															296	
Phe	Lys	Asp	Pro	Gly	Val	Arg	Cys	Lys	Asp	Ile	Asp	Glu	Cys	Ser	Gln	
					75				80			85				
agc ccc cag ccc tgt ggt cct aac tca tcc tgc aaa aac ctg tca ggg															344	
Ser	Pro	Gln	Pro	Cys	Gly	Pro	Asn	Ser	Ser	Cys	Lys	Asn	Leu	Ser	Gly	
					90				95			100				
agg tac aag tgc agc tgt tta gat ggt ttc tct tct ccc act gga aat															392	
Arg	Tyr	Lys	Cys	Ser	Cys	Leu	Asp	Gly	Phe	Ser	Ser	Pro	Thr	Gly	Asn	
					105				110			115				
gac tgg gtc cca gga aag ccg ggc aat ttc tcc tgt act gat atc aat															440	
Asp	Trp	Val	Pro	Gly	Lys	Pro	Gly	Asn	Phe	Ser	Cys	Thr	Asp	Ile	Asn	
					120				125			130				
gag tgc ctc acc agc agc gtc tgc cct gag cat tct gac tgt gtc aac															488	
Glu	Cys	Leu	Thr	Ser	Val	Cys	Pro	Glu	His	Ser	Asp	Cys	Val	Asn		
					135				140			145			150	
tcc atg gga agc tac agt tgc agc tgt caa gtt gga ttc atc tct aga															536	
Ser	Met	Gly	Ser	Tyr	Ser	Cys	Ser	Cys	Gln	Val	Gly	Phe	Ile	Ser	Arg	
					155				160			165				
aac tcc acc tgt gaa gac gtg gat gaa tgt gca gat cca aga gct tgc															584	
Asn	Ser	Thr	Cys	Glu	Asp	Val	Asp	Glu	Cys	Ala	Asp	Pro	Arg	Ala	Cys	
					170				175			180				
cca gag cat gca act tgt aat aac act gtt gga aac tac tct tgt ttc															632	
Pro	Glu	His	Ala	Thr	Cys	Asn	Asn	Thr	Val	Gly	Asn	Tyr	Ser	Cys	Phe	
					185				190			195				
tgc aac cca gga ttt gaa tcc agc agt ggc cac ttg agt ttc cag ggt															680	
Cys	Asn	Pro	Gly	Phe	Glu	Ser	Ser	Gly	His	Ieu	Ser	Phe	Gln	Gly		
					200				205			210				
ctc aaa gca tcg tgt gaa gat att gat gaa tgc act gaa atg tgc ccc															728	
Leu	Lys	Ala	Ser	Cys	Glu	Asp	Ile	Asp	Glu	Cys	Thr	Glu	Met	Cys	Pro	
					215				220			225			230	
atc aat tca aca tgc acc aac act cct ggg agc tac ttt tgc acc tgc															776	
Ile	Asn	Ser	Thr	Cys	Thr	Asn	Thr	Pro	Gly	Ser	Tyr	Phe	Cys	Thr	Cys	
					235				240			245				
cac cct ggc ttt gca cca agc aat gga cag ttg aat ttc aca gac caa															824	
His	Pro	Gly	Phe	Ala	Pro	Ser	Asn	Gly	Gln	Leu	Asn	Phe	Thr	Asp	Gln	
					250				255			260				
gga gtg gaa tgt aga gat att gat gag tgc cgc caa gat cca tca acc															872	
Gly	Val	Glu	Cys	Arg	Asp	Ile	Asp	Glu	Cys	Arg	Gln	Asp	Pro	Ser	Thr	
					265				270			275				
tgt ggt cct aat tct atc tgc acc aat gcc ctg ggc tcc tac agc tgt															920	
Cys	Gly	Pro	Asn	Ser	Ile	Cys	Thr	Asn	Ala	Leu	Gly	Ser	Tyr	Ser	Cys	
					280				285			290				

ggc tgc att gca ggc ttt cat ccc aat cca gaa ggc tcc cag aaa gat Gly Cys Ile Ala Gly Phe His Pro Asn Pro Glu Gly Ser Gln Lys Asp 295 300 305 310	968
ggc aac ttc agc tgc caa agg gtt ctc ttc aaa tgt aag gaa gat gtg Gly Asn Phe Ser Cys Gln Arg Val Leu Phe Lys Cys Lys Glu Asp Val 315 320 325	1016
ata ccc gat aat aag cag atc cag caa tgc caa gag gga acc gca gtg Ile Pro Asp Asn Lys Gln Ile Gln Cys Gln Glu Gly Thr Ala Val 330 335 340	1064
aaa cct gca tat gtc tcc ttt tgt gca caa ata aat aac atc ttc agc Lys Pro Ala Tyr Val Ser Phe Cys Ala Gln Ile Asn Asn Ile Phe Ser 345 350 355	1112
gtt ctg gac aaa gtg tgt gaa aat aaa acg acc gta gtt tct ctg aag Val Leu Asp Lys Val Cys Glu Asn Lys Thr Thr Val Val Ser Leu Lys 360 365 370	1160
aat aca act gag agc ttt gtc cct gtg ctt aaa caa ata tcc acg tgg Asn Thr Thr Glu Ser Phe Val Pro Val Leu Lys Gln Ile Ser Thr Trp 375 380 385 390	1208
act aaa ttc acc aag gaa gag acg tcc tcc ctg gcc aca gtc ttc ctg Thr Lys Phe Thr Lys Glu Glu Thr Ser Ser Leu Ala Thr Val Phe Leu 395 400 405	1256
gag agt gtg gaa agc atg aca ctg gca tct ttt tgg aaa ccc tca gca Glu Ser Val Glu Ser Met Thr Leu Ala Ser Phe Trp Lys Pro Ser Ala 410 415 420	1304
aat atc act ccg gct gtt cgg acg gaa tac tta gac att gag agc aaa Asn Ile Thr Pro Ala Val Arg Thr Glu Tyr Leu Asp Ile Glu Ser Lys 425 430 435	1352
gtt atc aac aaa gaa tgc agt gaa gag aat gtg acg ttg gac ttg gta Val Ile Asn Lys Glu Cys Ser Glu Glu Asn Val Thr Leu Asp Leu Val 440 445 450	1400
gcc aag ggg gat aag atg aag atc ggg tgt tcc aca att gag gaa tct Ala Lys Gly Asp Lys Met Lys Ile Gly Cys Ser Thr Ile Glu Glu Ser 455 460 465 470	1448
gaa tcc aca gag acc act ggt gtg gct ttt gtc tcc ttt gtg ggc atg Glu Ser Thr Glu Thr Thr Gly Val Ala Phe Val Ser Phe Val Gly Met 475 480 485	1496
gaa tcg gtt tta aat gag cgc ttc ttc aaa gac cac cag gct ccc ttg Glu Ser Val Leu Asn Glu Arg Phe Phe Lys Asp His Gln Ala Pro Leu 490 495 500	1544
acc acc tct gag atc aag ctg aag atg aat tct cga gtc gtt ggg ggc Thr Thr Ser Glu Ile Lys Leu Lys Met Asn Ser Arg Val Val Gly Gly 505 510 515	1592
ata atg act gga gag aag aaa gac ggc ttc tca gat cca atc atc tac Ile Met Thr Gly Glu Lys Lys Asp Gly Phe Ser Asp Pro Ile Ile Tyr 520 525 530	1640
act ctg gag aac att cag cca aag cag aag ttt gag agg ccc atc tgt	1688

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Thr	Leu	Glu	Asn	Ile	Gln	Pro	Lys	Gln	Lys	Phe	Glu	Arg	Pro	Ile	Cys	
535					540				545				550			
gtt	tcc	tgg	agc	act	gat	gtg	aag	ggt	gga	aga	tgg	aca	tcc	ttt	ggc	1736
Val	Ser	Trp	Ser	Thr	Asp	Val	Lys	Gly	Gly	Arg	Trp	Thr	Ser	Phe	Gly	
					555				560				565			
tgt	gtg	atc	ctg	gaa	gct	tct	gag	aca	tat	acc	atc	tgc	agc	tgt	aat	1784
Cys	Val	Ile	Leu	Glu	Ala	Ser	Glu	Thr	Tyr	Thr	Ile	Cys	Ser	Cys	Asn	
					570				575				580			
cag	atg	gca	aat	ctt	gcc	gtt	atc	atg	gcg	tct	ggg	gag	ctc	acg	atg	1832
Gln	Met	Ala	Asn	Leu	Ala	Val	Ile	Met	Ala	Ser	Gly	Glu	Leu	Thr	Met	
					585				590				595			
gac	ttt	tcc	ttg	tac	atc	att	agc	cat	gta	ggc	att	atc	atc	tcc	ttg	1880
Asp	Phe	Ser	Leu	Tyr	Ile	Ile	Ser	His	Val	Gly	Ile	Ile	Ile	Ser	Leu	
					600				605				610			
gtg	tgc	ctc	ttg	gcc	atc	gcc	acc	ttt	ctg	ctg	tgt	cgc	tcc	atc		1928
Val	Cys	Leu	Val	Leu	Ala	Ile	Ala	Thr	Phe	Leu	Leu	Cys	Arg	Ser	Ile	
					615				620				625			630
cga	aat	cac	aac	acc	tac	ctc	cac	ctg	cac	ctc	tgc	gtg	tgt	ctc	ctc	1976
Arg	Asn	His	Asn	Thr	Tyr	Leu	His	Leu	His	Leu	Cys	Val	Cys	Leu	Leu	
					635				640				645			
ttg	gcf	aag	act	ctc	ctc	gcc	ggt	ata	cac	aag	act	gac	aac	aag		2024
Leu	Ala	Lys	Thr	Leu	Phe	Leu	Ala	Gly	Ile	His	Lys	Thr	Asp	Asn	Lys	
					650				655				660			
atg	ggc	tgc	gcc	atc	atc	gcf	ggc	ttc	ctg	cac	tac	ctt	ttc	ctt	gcc	2072
Met	Gly	Cys	Ala	Ile	Ile	Ala	Gly	Phe	Leu	His	Tyr	Leu	Phe	Leu	Ala	
					665				670				675			
tgc	ttc	ttc	tgg	atg	ctg	gtg	gag	gct	gtg	ata	ctg	ttc	ttg	atg	gtc	2120
Cys	Phe	Phe	Trp	Met	Leu	Val	Glu	Ala	Val	Ile	Leu	Phe	Leu	Met	Val	
					680				685				690			
aga	aac	ctg	aag	gtg	gtg	aat	tac	ttc	agc	tct	cgc	aac	atc	aag	atg	2168
Arg	Asn	Leu	Lys	Val	Val	Asn	Tyr	Phe	Ser	Ser	Arg	Asn	Ile	Lys	Met	
					695				700				705			710
ctg	cac	atc	tgt	gcc	ttt	ggt	tat	ggg	ctg	ccg	atg	ctg	gtg	gtg	gtg	2216
Leu	His	Ile	Cys	Ala	Phe	Gly	Tyr	Gly	Ile	Pro	Met	Ile	Val	Val	Val	
					715				720				725			
atc	tct	gcc	agt	gtg	cag	cca	cag	ggc	tat	gga	atg	cat	aat	cgc	tgc	2264
Ile	Ser	Ala	Ser	Val	Gln	Pro	Gln	Gly	Tyr	Gly	Met	His	Asn	Arg	Cys	
					730				735				740			
tgg	ctg	aat	aca	gag	aca	ggg	ttc	atc	tgg	agt	ttc	ttg	ggg	cca	gtt	2312
Trp	Leu	Asn	Thr	Glu	Thr	Gly	Phe	Ile	Trp	Ser	Phe	Leu	Gly	Pro	Val	
					745				750				755			
tgc	aca	gtt	ata	gtg	atc	aac	tcc	ctt	ctc	ctg	acc	tgg	acc	ttg	tgg	2360
Cys	Thr	Val	Ile	Val	Ile	Asn	Ser	Leu	Leu	Leu	Thr	Trp	Thr	Leu	Trp	
					760				765				770			
atc	ctg	agg	cag	agg	ctt	tcc	agt	gtt	aat	gcc	gaa	gtc	tca	acg	cta	2408
Ile	Leu	Arg	Gln	Arg	Leu	Ser	Ser	Val	Asn	Ala	Glu	Val	Ser	Thr	Leu	
					775				780				785			790

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aaa gac acc agg tta ctg acc ttc aag gcc ttt gcc cag ctc ttc atc	2456
Lys Asp Thr Arg Leu Leu Thr Phe Lys Ala Phe Ala Gln Leu Phe Ile	
795 800 805	
ctg ggc tgc tcc tgg gtg ctg ggc att ttt cag att gga cct gtg gca	2504
Leu Gly Cys Ser Trp Val Leu Gly Ile Phe Gln Ile Gly Pro Val Ala	
810 815 820	
ggt gtc atg gct tac ctg ttc acc atc atc aac agc ctg cag ggg gcc	2552
Gly Val Met Ala Tyr Leu Phe Thr Ile Ile Asn Ser Leu Gln Gly Ala	
825 830 835	
ttc atc ttc ctc atc cac tgt ctg ctc aac ggc cag gta cga gaa gaa	2600
Phe Ile Phe Leu Ile His Cys Leu Leu Asn Gly Gln Val Arg Glu Glu	
840 845 850	
tac aag agg tgg atc act ggg aag acg aag ccc agc tcc cag tcc cag	2648
Tyr Lys Arg Trp Ile Thr Gly Lys Thr Lys Pro Ser Ser Gln Ser Gln	
855 860 865 870	
acc tca agg atc ttg ctg tcc atg cca tcc gct tcc aag acg ggt	2696
Thr Ser Arg Ile Leu Leu Ser Ser Met Pro Ser Ala Ser Lys Thr Gly	
875 880 885	
taa agtcctttct tgctttcaaa tatgctatgg agccacagtt gaggacagta	2749
gtttcctgca ggagcctacc ctgaaatctc ttctcagctt aacatggaaa tgaggatccc	2809
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ctgatgagaa atcaggcggt tctgctccaa acgaccattt tatcttcgtg ctctgcaact	2929
tcttcaattc cagagtttct gagaacagac ccaaattcaa tggcatgacc aagaacacct	2989
ggctaccatt ttgtttctc ctgcccctgt tggcatgg ttctaagcat gcccctccag	3049
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<400> 9

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Ser Trp Glu Gly His Ile Arg Pro Thr Arg Lys Pro Asn Thr Lys Gly
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Asn Asn Cys Arg Asp Ser Thr Leu Cys Pro Ala Tyr Ala Thr Cys Thr
 35 40 45

Asn Thr Val Asp Ser Tyr Tyr Cys Ala Cys Lys Gln Gly Phe Leu Ser

- 20 -

50

55

60

Ser Asn Gly Gln Asn His Phe Lys Asp Pro Gly Val Arg Cys Lys Asp
65 70 75 80

Ile Asp Glu Cys Ser Gln Ser Pro Gln Pro Cys Gly Pro Asn Ser Ser
85 90 95

Cys Lys Asn Leu Ser Gly Arg Tyr Lys Cys Ser Cys Leu Asp Gly Phe
100 105 110

Ser Ser Pro Thr Gly Asn Asp Trp Val Pro Gly Lys Pro Gly Asn Phe
115 120 125

Ser Cys Thr Asp Ile Asn Glu Cys Leu Thr Ser Ser Val Cys Pro Glu
130 135 140

His Ser Asp Cys Val Asn Ser Met Gly Ser Tyr Ser Cys Ser Cys Gln
145 150 155 160

Val Gly Phe Ile Ser Arg Asn Ser Thr Cys Glu Asp Val Asp Glu Cys
165 170 175

Ala Asp Pro Arg Ala Cys Pro Glu His Ala Thr Cys Asn Asn Thr Val
180 185 190

Gly Asn Tyr Ser Cys Phe Cys Asn Pro Gly Phe Glu Ser Ser Ser Gly
195 200 205

His Leu Ser Phe Gln Gly Leu Lys Ala Ser Cys Glu Asp Ile Asp Glu
210 215 220

Cys Thr Glu Met Cys Pro Ile Asn Ser Thr Cys Thr Asn Thr Pro Gly
225 230 235 240

Ser Tyr Phe Cys Thr Cys His Pro Gly Phe Ala Pro Ser Asn Gly Gln
245 250 255

Leu Asn Phe Thr Asp Gln Gly Val Glu Cys Arg Asp Ile Asp Glu Cys
260 265 270

Arg Gln Asp Pro Ser Thr Cys Gly Pro Asn Ser Ile Cys Thr Asn Ala
275 280 285

Leu Gly Ser Tyr Ser Cys Gly Cys Ile Ala Gly Phe His Pro Asn Pro
290 295 300

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Glu Gly Ser Gln Lys Asp Gly Asn Phe Ser Cys Gln Arg Val Leu Phe
305 310 315 320

Lys Cys Lys Glu Asp Val Ile Pro Asp Asn Lys Gln Ile Gln Gln Cys
325 330 335

Gln Glu Gly Thr Ala Val Lys Pro Ala Tyr Val Ser Phe Cys Ala Gln
340 345 350

Ile Asn Asn Ile Phe Ser Val Leu Asp Lys Val Cys Glu Asn Lys Thr
355 360 365

Thr Val Val Ser Leu Lys Asn Thr Thr Glu Ser Phe Val Pro Val Leu
370 375 380

Lys Gln Ile Ser Thr Trp Thr Lys Phe Thr Lys Glu Glu Thr Ser Ser
385 390 395 400

Leu Ala Thr Val Phe Leu Glu Ser Val Glu Ser Met Thr Leu Ala Ser
405 410 415

Phe Trp Lys Pro Ser Ala Asn Ile Thr Pro Ala Val Arg Thr Glu Tyr
420 425 430

Leu Asp Ile Glu Ser Lys Val Ile Asn Lys Glu Cys Ser Glu Glu Asn
435 440 445

Val Thr Leu Asp Leu Val Ala Lys Gly Asp Lys Met Lys Ile Gly Cys
450 455 460

Ser Thr Ile Glu Glu Ser Glu Ser Thr Glu Thr Thr Gly Val Ala Phe
465 470 475 480

Val Ser Phe Val Gly Met Glu Ser Val Leu Asn Glu Arg Phe Phe Lys
485 490 495

Asp His Gln Ala Pro Leu Thr Thr Ser Glu Ile Lys Leu Lys Met Asn
500 505 510

Ser Arg Val Val Gly Gly Ile Met Thr Gly Glu Lys Lys Asp Gly Phe
515 520 525

Ser Asp Pro Ile Ile Tyr Thr Leu Glu Asn Ile Gln Pro Lys Gln Lys
530 535 540

Phe Glu Arg Pro Ile Cys Val Ser Trp Ser Thr Asp Val Lys Gly

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545

550

555

560

Arg Trp Thr Ser Phe Gly Cys Val Ile Leu Glu Ala Ser Glu Thr Tyr
565 570 575

Thr Ile Cys Ser Cys Asn Gln Met Ala Asn Leu Ala Val Ile Met Ala
580 585 590

Ser Gly Glu Leu Thr Met Asp Phe Ser Leu Tyr Ile Ile Ser His Val
595 600 605

Gly Ile Ile Ile Ser Leu Val Cys Leu Val Leu Ala Ile Ala Thr Phe
610 615 620

Leu Leu Cys Arg Ser Ile Arg Asn His Asn Thr Tyr Leu His Leu His
625 630 635 640

Leu Cys Val Cys Leu Leu Ala Lys Thr Leu Phe Leu Ala Gly Ile
645 650 655

His Lys Thr Asp Asn Lys Met Gly Cys Ala Ile Ile Ala Gly Phe Leu
660 665 670

His Tyr Leu Phe Leu Ala Cys Phe Phe Trp Met Leu Val Glu Ala Val
675 680 685

Ile Leu Phe Leu Met Val Arg Asn Leu Lys Val Val Asn Tyr Phe Ser
690 695 700

Ser Arg Asn Ile Lys Met Leu His Ile Cys Ala Phe Gly Tyr Gly Leu
705 710 715 720

Pro Met Leu Val Val Val Ile Ser Ala Ser Val Gln Pro Gln Gly Tyr
725 730 735

Gly Met His Asn Arg Cys Trp Leu Asn Thr Glu Thr Gly Phe Ile Trp
740 745 750

Ser Phe Leu Gly Pro Val Cys Thr Val Ile Val Ile Asn Ser Leu Leu
755 760 765

Leu Thr Trp Thr Leu Trp Ile Leu Arg Gln Arg Leu Ser Ser Val Asn
770 775 780

Ala Glu Val Ser Thr Leu Lys Asp Thr Arg Leu Leu Thr Phe Lys Ala
785 790 795 800

- 23 -

phe Ala Gln Leu Phe Ile Leu Gly Cys Ser Trp Val Leu Gly Ile Phe
 805 810 815

Gln Ile Gly Pro Val Ala Gly Val Met Ala Tyr Leu Phe Thr Ile Ile
 820 825 830

Asn Ser Leu Gln Gly Ala Phe Ile Phe Leu Ile His Cys Leu Leu Asn
 835 840 845

Gly Gln Val Arg Glu Glu Tyr Lys Arg Trp Ile Thr Gly Lys Thr Lys
 850 855 860

Pro Ser Ser Gln Ser Gln Thr Ser Arg Ile Leu Leu Ser Ser Met Pro
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Ser Ala Ser Lys Thr Gly
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 aaacgctcac tggcaaaac accttcactg aaaagagacc tcataattatg caaaaaaaaat 180
 cttaaaaggc ctctgccttc agaagttaca ag atg atc aat tca acc tcc aca 233
 Met Ile Asn Ser Thr Ser Thr
 1 5

cag cct cca gat gaa tcc tgc tct cag aac ctc ctg atc act cag cag 281
 Gln Pro Pro Asp Glu Ser Cys Ser Gln Asn Leu Leu Ile Thr Gln Gln
 10 15 20

atc att cct gtg ctg tac tgt atg gtc ttc att gca gga atc cta ctc 329
 Ile Ile Pro Val Leu Tyr Cys Met Val Phe Ile Ala Gly Ile Leu Leu
 25 30 35

aat gga gtg tca gga tgg ata ttc ttt tac gtg ccc agc tct gag agt 377
 Asn Gly Val Ser Gly Trp Ile Phe Phe Tyr Val Pro Ser Ser Glu Ser
 40 45 50 55

ttc atc atc tat ctc aag aac att gtt att gct gac ttt gtg atg agc 425
 Phe Ile Ile Tyr Leu Lys Asn Ile Val Ile Ala Asp Phe Val Met Ser
 60 65 70

- 24 -

ctg act ttt cct ttc aag atc ctt ggt gac tca ggc ctt ggt ccc tgg	473
Leu Thr Phe Pro Phe Lys Ile Leu Gly Asp Ser Gly Leu Gly Pro Trp	
75 80 85	
cag ctg aac gtg ttt gtg tgc agg gtc tct gcc gtg ctc ttc tac gtc	521
Gln Leu Asn Val Phe Val Cys Arg Val Ser Ala Val Leu Phe Tyr Val	
90 95 100	
aac atg tac gtc agc att gtg ttc ttt ggg ctc atc agc ttt gac aga	569
Asn Met Tyr Val Ser Ile Val Phe Phe Gly Leu Ile Ser Phe Asp Arg	
105 110 115	
tat tat aaa att gta aag cct ctt tgg act tct ttc atc cag tca gtg	617
Tyr Tyr Lys Ile Val Lys Pro Leu Trp Thr Ser Phe Ile Gln Ser Val	
120 125 130 135	
agt tac agc aaa ctt ctg tca gtg ata gta tgg atg ctc atg ctc ctc	665
Ser Tyr Ser Lys Leu Leu Ser Val Ile Val Trp Met Leu Met Leu Leu	
140 145 150	
ctt gct gtt cca aat att att ctc acc aac cag agt gtt agg gag gtt	713
Leu Ala Val Pro Asn Ile Ile Leu Thr Asn Gln Ser Val Arg Glu Val	
155 160 165	
aca caa ata aaa tgt ata gaa ctg aaa agt gaa ctg gga cgg aag tgg	761
Thr Gln Ile Lys Cys Ile Glu Leu Lys Ser Glu Leu Gly Arg Lys Trp	
170 175 180	
cac aaa gca tca aac tac atc ttc gtg gcc atc ttc tgg att gtg ttt	809
His Lys Ala Ser Asn Tyr Ile Phe Val Ala Ile Phe Trp Ile Val Phe	
185 190 195	
ctt ttg tta atc gtt ttc tat act gct atc aca aag aaa atc ttt aag	857
Leu Leu Leu Ile Val Phe Tyr Thr Ala Ile Thr Lys Lys Ile Phe Lys	
200 205 210 215	
tcc cac ctt aag tca agt cgg aat tcc act tcg gtc aaa aag aaa tct	905
Ser His Leu Lys Ser Ser Arg Asn Ser Thr Ser Val Lys Lys Lys Ser	
220 225 230	
agc cgc aac ata ttc agc atc gtg ttt gtg ttt ttt gtc tgt ttt gta	953
Ser Arg Asn Ile Phe Ser Ile Val Phe Val Phe Phe Val Cys Phe Val	
235 240 245	
cct tac cat att gcc aga atc ccc tac aca aag agt cag acc gaa gct	1001
Pro Tyr His Ile Ala Arg Ile Pro Tyr Thr Lys Ser Gln Thr Glu Ala	
250 255 260	
cat tac agc tgc cag tca aaa gaa atc ttg cgg tat atg aaa gaa ttc	1049
His Tyr Ser Cys Gln Ser Lys Glu Ile Leu Arg Tyr Met Lys Glu Phe	
265 270 275	
act ctg cta cta tct gct gca aat gta tgc ttg gac cct att att tat	1097
Thr Leu Leu Leu Ser Ala Ala Asn Val Cys Leu Asp Pro Ile Ile Tyr	
280 285 290 295	
ttc ttt cta tgc cag ccg ttt agg gaa atc tta tgt aag aaa ttg cac	1145
Phe Phe Leu Cys Gln Pro Phe Arg Glu Ile Leu Cys Lys Lys Leu His	
300 305 310	
att cca tta aaa gct cag aat gac cta gac att tcc aga atc aaa aga	1193
Ile Pro Leu Lys Ala Gln Asn Asp Leu Asp Ile Ser Arg Ile Lys Arg	

- 25 -

315	320	325	
gga aat aca aca ctt gaa agc aca gat act ttg tga gttcctaccc			1239
Gly Asn Thr Thr Ileu Glu Ser Thr Asp Thr Leu			
330	335		
tcttccaaag aaagaccacg tgtgcatgtt gtcatcttca attacataac agaaaatcaat			1299
aagatatgtg ccctcatcat aaatatcatc tctagcactg ccatccaatt tagttcaata			1359
aaattcaaat ataagttcc atgcttttt gtaacatcaa agaaaacata cccatcagta			1419
atttctctaa tactgacctt tctattctct attaataaaa aattaataca tacaattatt			1479
caattctatt atattaaaat aagttaaagt ttataaccac tagtctggtc agttaatgta			1539
gaaatttaaaa tagtaaataa aacacaacat aatcaaagac aactcactca ggcatcttct			1599
ttctctaaat accagaatct agtatgtaat tggtttcaac actgtcctta aagactaact			1659
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tattgatgta tttcatggca ctgcaaagga agaggaatat taattgtata cttagcaaga			1839
aaattttttt tttctgatag cactttgagg atattagata catgctaaat atgttttcta			1899
caaagactta cgtcatttaa tgagcctggg gttctgggt tagaatattt ttaagtaggc			1959
tttactgaga gaaactaaat attggcatac gttatcagca acttcccctg ttcaatagta			2019
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tctaaaattt acattaatga gtgcaaata acacataaaa tgaaaattca cacatcacat			2199
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agctaccaaa actaaattct ttctctgcta ttaactggct agaagacatt catctatttt			2319
tcaaatgttc tttcaaaaca tttttataag taatgtttgt atctatttca tgctttactg			2379
tctatatact aataaagaaa tgtttaata ccgaaaaaaaaaaaaaaaa			2428

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 <213> Homo sapiens

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- 26 -

Phe Ile Ala Gly Ile Leu Leu Asn Gly Val Ser Gly Trp Ile Phe Phe
35 40 45

Tyr Val Pro Ser Ser Glu Ser Phe Ile Ile Tyr Leu Lys Asn Ile Val
50 55 60

Ile Ala Asp Phe Val Met Ser Leu Thr Phe Pro Phe Lys Ile Leu Gly
65 70 75 80

Asp Ser Gly Leu Gly Pro Trp Gln Leu Asn Val Phe Val Cys Arg Val
85 90 95

Ser Ala Val Leu Phe Tyr Val Asn Met Tyr Val Ser Ile Val Phe Phe
100 105 110

Gly Leu Ile Ser Phe Asp Arg Tyr Tyr Lys Ile Val Lys Pro Leu Trp
115 120 125

Thr Ser Phe Ile Gln Ser Val Ser Tyr Ser Lys Leu Leu Ser Val Ile
130 135 140

Val Trp Met Leu Met Leu Leu Leu Ala Val Pro Asn Ile Ile Leu Thr
145 150 155 160

Asn Gln Ser Val Arg Glu Val Thr Gln Ile Lys Cys Ile Glu Leu Lys
165 170 175

Ser Glu Leu Gly Arg Lys Trp His Lys Ala Ser Asn Tyr Ile Phe Val
180 185 190

Ala Ile Phe Trp Ile Val Phe Leu Leu Leu Ile Val Phe Tyr Thr Ala
195 200 205

Ile Thr Lys Lys Ile Phe Lys Ser His Leu Lys Ser Ser Arg Asn Ser
210 215 220

Thr Ser Val Lys Lys Ser Ser Arg Asn Ile Phe Ser Ile Val Phe
225 230 235 240

Val Phe Phe Val Cys Phe Val Pro Tyr His Ile Ala Arg Ile Pro Tyr
245 250 255

Thr Lys Ser Gln Thr Glu Ala His Tyr Ser Cys Gln Ser Lys Glu Ile
260 265 270

Leu Arg Tyr Met Lys Glu Phe Thr Leu Leu Leu Ser Ala Ala Asn Val
275 280 285

Cys Leu Asp Pro Ile Ile Tyr Phe Phe Leu Cys Gln Pro Phe Arg Glu
 290 295 300

Ile Leu Cys Lys Lys Leu His Ile Pro Leu Lys Ala Gln Asn Asp Leu
 305 310 315 320

Asp Ile Ser Arg Ile Lys Arg Gly Asn Thr Thr Leu Glu Ser Thr Asp
 325 330 335

Thr Leu

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 <211> 1734
 <212> DNA
 <213> Homo sapiens

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tctgcggcgt gactggaggc ccag atg gtc atc atg ggc cag tgc tac tac	111
Met Val Ile Met Gly Gln Cys Tyr Tyr	
1 5	
aac gag acc atc ggc ttc ttc tat aac aac agt ggc aaa gag ctc agc	159
Asn Glu Thr Ile Gly Phe Phe Tyr Asn Asn Ser Gly Lys Glu Leu Ser	
10 15 20 25	
tcc cac tgg cgg ccc aag gat gtg gtc gtg gca ctg ggg ctg acc	207
Ser His Trp Arg Pro Lys Asp Val Val Val Ala Leu Gly Leu Thr	
30 35 40	
gtc agc gtg ctg gtg ctg acc aat ctg ctg gtc ata gca gcc atc	255
Val Ser Val Leu Val Leu Thr Asn Leu Leu Val Ile Ala Ala Ile	
45 50 55	
gcc tcc aac cgc cgc ttc cac cag ccc atc tac tac ctg ctc ggc aat	303
Ala Ser Asn Arg Arg Phe His Gln Pro Ile Tyr Tyr Leu Leu Gly Asn	
60 65 70	
ctg gcc gcg gct gac ctc ttc gcg ggc gtg gcc tac ctc ttc ctc atg	351
Leu Ala Ala Ala Asp Leu Phe Ala Gly Val Ala Tyr Leu Phe Leu Met	
75 80 85	
ttc cac act ggt ccc cgc aca gcc cga ctt tca ctt gag ggc tgg ttc	399
Phe His Thr Gly Pro Arg Thr Ala Arg Leu Ser Leu Glu Gly Trp Phe	
90 95 100 105	
ctg cgg cag ggc ttg ctg gac aca agc ctc act gcg tcg gtg gcc aca	447
Leu Arg Gln Gly Leu Leu Asp Thr Ser Leu Thr Ala Ser Val Ala Thr	
110 115 120	

ctg ctg gcc atc gcc gtg gag cgg cac cgc agt gtg atg gcc gtg cag	495
Leu Leu Ala Ile Ala Val Glu Arg His Arg Ser Val Met Ala Val Gln	
125 130 135	.
ctg cac agc cgc ctg ccc cgt ggc cgc gtg gtc atg ctc att gtg ggc	543
Leu His Ser Arg Leu Pro Arg Gly Arg Val Val Met Leu Ile Val Gly	
140 145 150	
gtg tgg gtg gct gcc ctg ggc ctg ggg ctg ctg cct gcc cac tcc tgg	591
Val Trp Val Ala Ala Leu Gly Leu Gly Leu Pro Ala His Ser Trp	
155 160 165	
cac tgc ctc tgt gcc ctg gac cgc tgc tca cgc atg gca ccc ctg ctc	639
His Cys Leu Cys Ala Leu Asp Arg Cys Ser Arg Met Ala Pro Leu Leu	
170 175 180 185	
agc cgc tcc tat ttg gcc gtc tgg gct ctg tcg agc ctg ctt gtc ttc	687
Ser Arg Ser Tyr Leu Ala Val Trp Ala Leu Ser Ser Leu Leu Val Phe	
190 195 200	
ctg ctc atg gtg gct gtg tac acc cgc att ttc ttc tac gtg cgg cgg	735
Leu Leu Met Val Ala Val Tyr Thr Arg Ile Phe Phe Tyr Val Arg Arg	
205 210 215	
cga gtg cag cgc atg gca gag cat gtc agc tgc cac ccc cgc tac cga	783
Arg Val Gln Arg Met Ala Glu His Val Ser Cys His Pro Arg Tyr Arg	
220 225 230	
gag acc acg ctc agc ctg gtc aag act gtt gtc atc atc ctg ggg gcg	831
Glu Thr Thr Leu Ser Leu Val Lys Thr Val Val Ile Ile Leu Gly Ala	
235 240 245	
ttc gtg gtc tgc tgg aca cca ggc cag gtg gta ctg ctc ctg gat ggt	879
Phe Val Val Cys Trp Thr Pro Gly Gln Val Val Leu Leu Leu Asp Gly	
250 255 260 265	
tta ggc tgt gag tcc tgc aat gtc ctg gct gta gaa aag tac ttc cta	927
Leu Gly Cys Glu Ser Cys Asn Val Leu Ala Val Glu Lys Tyr Phe Leu	
270 275 280	
ctg ttg gcc gag gcc aac tca ctg gtc aat gct gct gtg tac tct tgc	975
Leu Leu Ala Glu Ala Asn Ser Leu Val Asn Ala Ala Val Tyr Ser Cys	
285 290 295	
cga gat gct gag atg cgc cgc acc ttc cgc cgc ctt ctc tgc tgc gcg	1023
Arg Asp Ala Glu Met Arg Arg Thr Phe Arg Arg Leu Leu Cys Cys Ala	
300 305 310	
tgc ctc cgc cag tcc acc cgc gag tct gtc cac tat aca tcc tct gcc	1071
Cys Leu Arg Gln Ser Thr Arg Glu Ser Val His Tyr Thr Ser Ser Ala	
315 320 325	
cag gga ggt gcc agc act cgc atc atg ctt ccc gag aac ggc cac cca	1119
Gln Gly Gly Ala Ser Thr Arg Ile Met Leu Pro Glu Asn Gly His Pro	
330 335 340 345	
ctg atg act cca ccc ttt agc tac ctt gaa ctt cag cgg tac gcg gca	1167
Ieu Met Thr Pro Pro Phe Ser Tyr Leu Glu Leu Gln Arg Tyr Ala Ala	
350 355 360	
agc aac aaa tcc aca gcc oct gat gac ttg tgg gtg ctc ctg gct caa	1215

- 29 -

Ser Asn Lys Ser Thr Ala Pro Asp Asp Leu Trp Val Leu Leu Ala Gln		
365	370	375
ccc aac caa cag gac tga ctgactggca ggacaaggta tggcatggca		1263
Pro Asn Gln Gln Asp		
380		
cagcaccact gccaggcctc cccaggcaca ccactctgcc cagggaatgg gggctttggg		1323
tcatctccca ctgcctgggg gagtcagatg gggtcagga atctggctct tcagccatct		1383
caggtttagg gggtttgtaa cagacattat tctgtttca ctgcgtatcc ttggtaagcc		1443
ctgtggactg gttcctgctg tgtgatgctg agggtttaa ggtggggaga gataagggct		1503
ctctcgggcc atgctacccg gtatgactgg gtaatgagga cagactgtgg acaccccatc		1563
tacctgagtc tgattctta gcagcagaga ctgaggggtg cagagtgtga gctggaaag		1623
gtttgtggct cttgcagcc tccagggact ggctgtccc caatagaatt gaagcagttc		1683
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Tyr Asn Asn Ser Gly Lys Glu Leu Ser Ser His Trp Arg Pro Lys Asp		
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Val Val Val Val Ala Leu Gly Ile Thr Val Ser Val Leu Val Leu Leu		
35	40	45

Thr Asn Leu Leu Val Ile Ala Ala Ile Ala Ser Asn Arg Arg Phe His		
50	55	60

Gln Pro Ile Tyr Tyr Leu Leu Gly Asn Leu Ala Ala Ala Asp Leu Phe			
65	70	75	80

Ala Gly Val Ala Tyr Leu Phe Leu Met Phe His Thr Gly Pro Arg Thr		
85	90	95

Ala Arg Leu Ser Leu Glu Gly Trp Phe Leu Arg Gln Gly Leu Leu Asp		
100	105	110

Thr Ser Leu Thr Ala Ser Val Ala Thr Leu Leu Ala Ile Ala Val Glu		
115	120	125

- 30 -

Arg His Arg Ser Val Met Ala Val Gln Leu His Ser Arg Leu Pro Arg
130 135 140

Gly Arg Val Val Met Leu Ile Val Gly Val Trp Val Ala Ala Leu Gly
145 150 155 160

Leu Gly Leu Leu Pro Ala His Ser Trp His Cys Leu Cys Ala Leu Asp
165 170 175

Arg Cys Ser Arg Met Ala Pro Leu Leu Ser Arg Ser Tyr Leu Ala Val
180 185 190

Trp Ala Leu Ser Ser Leu Leu Val Phe Leu Leu Met Val Ala Val Tyr
195 200 205

Thr Arg Ile Phe Phe Tyr Val Arg Arg Arg Val Gln Arg Met Ala Glu
210 215 220

His Val Ser Cys His Pro Arg Tyr Arg Glu Thr Thr Leu Ser Leu Val
225 230 235 240

Lys Thr Val Val Ile Ile Leu Gly Ala Phe Val Val Cys Trp Thr Pro
245 250 255

Gly Gln Val Val Leu Leu Asp Gly Leu Gly Cys Glu Ser Cys Asn
260 265 270

Val Leu Ala Val Glu Lys Tyr Phe Leu Leu Leu Ala Glu Ala Asn Ser
275 280 285

Leu Val Asn Ala Ala Val Tyr Ser Cys Arg Asp Ala Glu Met Arg Arg
290 295 300

Thr Phe Arg Arg Leu Leu Cys Cys Ala Cys Leu Arg Gln Ser Thr Arg
305 310 315 320

Glu Ser Val His Tyr Thr Ser Ser Ala Gln Gly Gly Ala Ser Thr Arg
325 330 335

Ile Met Leu Pro Glu Asn Gly His Pro Leu Met Thr Pro Pro Phe Ser
340 345 350

Tyr Leu Glu Leu Gln Arg Tyr Ala Ala Ser Asn Lys Ser Thr Ala Pro
355 360 365

Asp Asp Leu Trp Val Leu Leu Ala Gln Pro Asn Gln Gln Asp

370

375

380

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atc ttc ctc act ggc ctc cct gcc aac ctc ctg gcc ctg cgg gcc ttt
 Ile Phe Leu Thr Gly Leu Pro Ala Asn Leu Leu Ala Leu Arg Ala Phe
 20 25 30

gtg ggg cg³⁵ atc cg⁴⁰ c cag cct gca cct gtg cac atc ctc ctg
 Val Gly Arg Ile Arg Gln Pro Gln Pro Ala Pro Val His Ile Leu Leu
144

ctg agc ctg acg ctg gcc gac ctc ctc ctg ctg ctg ctg ctg ccc ttc 192
 Leu Ser Leu Thr Leu Ala Asp Leu Leu Leu Leu Leu Leu Leu Pro Phe
 50 55 60

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aag atc atc gag gct gcg tcg aac ttc cgc tgg tac ctg ccc aag gtc 240
Lys Ile Ile Glu Ala Ala Ser Asn Phe Arg Trp Tyr Leu Pro Lys Val
65           70           75           80

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gtc tgc gcc ctc acg agt ttt ggc ttc tac agc agc atc tac tgc agc 288
 Val Cys Ala Leu Thr Ser Phe Gly Phe Tyr Ser Ser Ile Tyr Cys Ser
 85 90 95

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acg tgg ctc ctg gcg ggc atc agc atc gag cgc tac ctg gga gtg gct 336
Thr Trp Leu Leu Ala Gly Ile Ser Ile Glu Arg Tyr Leu Gly Val Ala
           100          105          110

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ttc ccc gtg cag tac aag ctc tcc cgc cgg cct ctg tat gga gtg att	384
Phe Pro Val Gln Tyr Lys Leu Ser Arg Arg Pro Leu Tyr Gly Val Ile	
115 120 125	

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gca gct ctg gtg gcc tgg gtt atg tcc ttt ggt cac tgc acc atc gtg 432
Ala Ala Leu Val Ala Trp Val Met Ser Phe Gly His Cys Thr Ile Val
          130          135          140

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atc atc gtt caa tac ttg aac acg act gag cag gtc aga agt ggc aat 480
 Ile Ile Val Gln Tyr Leu Asn Thr Thr Glu Gln Val Arg Ser Gly Asn
 145 150 155 160

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gaa att acc tgc tac gag aac ttc acc gat aac cag ttg gac gtg gtg 528
Glu Ile Thr Cys Tyr Glu Asn Phe Thr Asp Asn Gln Leu Asp Val Val
165           170           175

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ctg ccc gtg cg^g ctg gag ctg tgc ctg gtg ctc ttc ttc atc ccc atg 576
 Leu Pro Val Arg Leu Glu Leu Cys Leu Val Leu Phe Phe Ile Pro Met
 180 185 190

- 32 -

gca gtc acc atc ttc tgc tac tgg cgt ttt gtg tgg atc atg ctc tcc	624
Ala Val Thr Ile Phe Cys Tyr Trp Arg Phe Val Trp Ile Met Leu Ser	
195 200 205	
cag ccc ctt gtg ggg gcc cag agg cgg cgc cga gcc gtg ggg ctg gct	672
Gln Pro Leu Val Gly Ala Gln Arg Arg Arg Ala Val Gly Leu Ala	
210 215 220	
gtg gtg acg ctg ctc aat ttc ctg gtg tgc ttc gga cct tac aac gtg	720
Val Val Thr Leu Leu Asn Phe Leu Val Cys Phe Gly Pro Tyr Asn Val	
225 230 235 240	
tcc cac ctg gtg ggg tat cac cag aga aaa agc ccc tgg tgg cgg tca	768
Ser His Leu Val Gly Tyr His Gln Arg Lys Ser Pro Trp Trp Arg Ser	
245 250 255	
ata gcc gtg gtg ttc agt tca ctc aac gcc agt ctg gac ccc ctg ctc	816
Ile Ala Val Val Phe Ser Ser Leu Asn Ala Ser Leu Asp Pro Leu Leu	
260 265 270	
ttc tat ttc tct tct tca gtg gtg cgc agg gca ttt ggg aga ggg ctg	864
Phe Tyr Phe Ser Ser Val Val Arg Arg Ala Phe Gly Arg Gly Leu	
275 280 285	
cag gtg ctg cgg aat cag ggc tcc tcc ctg ttg gga cgc aga ggc aaa	912
Gln Val Leu Arg Asn Gln Gly Ser Ser Leu Leu Gly Arg Arg Gly Lys	
290 295 300	
gac aca gca gag ggg aca aat gag gac agg ggt gtg ggt caa gga gaa	960
Asp Thr Ala Glu Gly Thr Asn Glu Asp Arg Gly Val Gly Gln Gly Glu	
305 310 315 320	
ggg atg cca agt tcg gac ttc act aca gag tag	993
Gly Met Pro Ser Ser Asp Phe Thr Thr Glu	
325 330	
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20 25 30	
Val Gly Arg Ile Arg Gln Pro Gln Pro Ala Pro Val His Ile Leu Leu	
35 40 45	
Leu Ser Leu Thr Leu Ala Asp Leu Leu Leu Leu Leu Pro Phe	
50 55 60	
Lys Ile Ile Glu Ala Ala Ser Asn Phe Arg Trp Tyr Leu Pro Lys Val	
65 70 75 80	

Val Cys Ala Leu Thr Ser Phe Gly Phe Tyr Ser Ser Ile Tyr Cys Ser
85 90 95

Thr Trp Leu Leu Ala Gly Ile Ser Ile Glu Arg Tyr Leu Gly Val Ala
100 105 110

Phe Pro Val Gln Tyr Lys Leu Ser Arg Arg Pro Leu Tyr Gly Val Ile
115 120 125

Ala Ala Leu Val Ala Trp Val Met Ser Phe Gly His Cys Thr Ile Val
130 135 140

Ile Ile Val Gln Tyr Leu Asn Thr Thr Glu Gln Val Arg Ser Gly Asn
145 150 155 160

Glu Ile Thr Cys Tyr Glu Asn Phe Thr Asp Asn Gln Leu Asp Val Val
165 170 175

Leu Pro Val Arg Leu Glu Leu Cys Leu Val Leu Phe Phe Ile Pro Met
180 185 190

Ala Val Thr Ile Phe Cys Tyr Trp Arg Phe Val Trp Ile Met Leu Ser
195 200 205

Gln Pro Leu Val Gly Ala Gln Arg Arg Arg Ala Val Gly Leu Ala
210 215 220

Val Val Thr Leu Leu Asn Phe Leu Val Cys Phe Gly Pro Tyr Asn Val
225 230 235 240

Ser His Leu Val Gly Tyr His Gln Arg Lys Ser Pro Trp Trp Arg Ser
245 250 255

Ile Ala Val Val Phe Ser Ser Leu Asn Ala Ser Leu Asp Pro Leu Leu
260 265 270

Phe Tyr Phe Ser Ser Ser Val Val Arg Arg Ala Phe Gly Arg Gly Leu
275 280 285

Gln Val Leu Arg Asn Gln Gly Ser Ser Leu Leu Gly Arg Arg Gly Lys
290 295 300

Asp Thr Ala Glu Gly Thr Asn Glu Asp Arg Gly Val Gly Gln Gly Glu
305 310 315 320

- 34 -

Gly Met Pro Ser Ser Asp Phe Thr Thr Glu
325 330

<210> 16
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 Met Gly Asn Asp Ser Val Ser Tyr Glu Tyr Gly Asp Tyr
 1 5 10

agc gac ctc tcg gac cgc cct gtg gac tgc ctg gat ggc gcc tgc ctg 158
 Ser Asp Leu Ser Asp Arg Pro Val Asp Cys Leu Asp Gly Ala Cys Leu
 15 20 25

gcc atc gac ccg ctg cgc gtg gcc ccg ctc cca ctg tat gcc gac atc 206
 Ala Ile Asp Pro Leu Arg Val Ala Pro Leu Pro Leu Tyr Ala Ala Ile
 30 35 40 45

ttc ctg gtg ggg gtg ccg ggc aat gcc atg gtg gcc tgg gtg gct ggg 254
 Phe Leu Val Gly Val Pro Gly Asn Ala Met Val Ala Trp Val Ala Gly
 50 55 60

aag gtg gcc cgc ccg agg gtg ggt gcc acc tgg ttg ctc cac ctg gcc 302
 Lys Val Ala Arg Arg Val Gly Ala Thr Trp Leu Leu His Leu Ala
 65 70 75

gtg gcg gat ttg ctg tgc tgt ttg tct ctg ccc atc ctg gca gtg ccc 350
 Val Ala Asp Leu Leu Cys Cys Leu Ser Leu Pro Ile Leu Ala Val Pro
 80 85 90

att gcc cgt gga ggc cac tgg ccg tat ggt gca gtg ggc tgt cgg gcg 398
 Ile Ala Arg Gly Gly His Trp Pro Tyr Gly Ala Val Gly Cys Arg Ala
 95 100 105

ctg ccc tcc atc atc ctg ctg acc atg tat gcc agc gtc ctg ctc ctg 446
 Leu Pro Ser Ile Ile Leu Leu Thr Met Tyr Ala Ser Val Leu Leu Leu
 110 115 120 125

gca gct ctc agt gcc gac ctc tgc ttc ctg gct ctc ggg cct gcc tgg 494
 Ala Ala Leu Ser Ala Asp Leu Cys Phe Leu Ala Leu Gly Pro Ala Trp
 130 135 140

tgg tct acg gtt cag cgg gcg tgc ggg gtg cag gtg gcc tgt ggg gca 542
 Trp Ser Thr Val Gln Arg Ala Cys Gly Val Gln Val Ala Cys Gly Ala
 145 150 155

gcc tgg aca ctg gcc ttg ctg ctc acc gtg ccc tcc gcc atc tac cgc 590
 Ala Trp Thr Leu Ala Leu Leu Leu Thr Val Pro Ser Ala Ile Tyr Arg
 160 165 170

cgg ctg cac cag gag cac ttc cca gcc ccg ctg cag tgt gtg gac 638

- 35 -

Arg	Leu	His	Gln	Glu	His	Phe	Pro	Ala	Arg	Leu	Gln	Cys	Val	Val	Asp	
175						180				185						
tac	ggc	ggc	tcc	tcc	agc	acc	gag	aat	gcg	gtg	act	gcc	atc	cgg	ttt	686
Tyr	Gly	Gly	Ser	Ser	Ser	Ser	Thr	Glu	Asn	Ala	Val	Thr	Ala	Ile	Arg	Phe
190					195					200					205	
ctt	ttt	ggc	tcc	ctg	ggg	ccc	ctg	gtg	gcc	gtg	gcc	agc	tgc	cac	agt	734
Leu	Phe	Gly	Phe	Leu	Gly	Pro	Leu	Val	Ala	Val	Ala	Ser	Cys	His	Ser	
				210				215				220				
gcc	ctc	ctg	tgc	tgg	gca	gcc	cga	cgc	tgc	cg	ccg	ctg	ggc	aca	gcc	782
Ala	Leu	Leu	Cys	Trp	Ala	Ala	Arg	Arg	Cys	Arg	Pro	Leu	Gly	Thr	Ala	
					225				230			235				
att	gtg	gtg	ggg	ttt	ttt	gtc	tgc	tgg	gca	ccc	tac	cac	ctg	ctg	ggg	830
Ile	Val	Val	Gly	Phe	Phe	Val	Cys	Trp	Ala	Pro	Tyr	His	Leu	Leu	Gly	
					240			245			250					
ctg	gtg	ctc	act	gtg	gcc	ccg	aac	tcc	gca	ctc	ctg	gcc	agg	gcc		878
Leu	Val	Leu	Thr	Val	Ala	Ala	Pro	Asn	Ser	Ala	Leu	Leu	Ala	Arg	Ala	
					255			260			265					
ctg	cgg	gct	gaa	ccc	ctc	atc	gtg	ggc	ctt	gcc	ctc	gct	cac	agc	tgc	926
Leu	Arg	Ala	Glu	Pro	Leu	Ile	Val	Gly	Leu	Ala	Leu	Ala	His	Ser	Cys	
					270			275			280			285		
ctc	aat	ccc	atg	ctc	tcc	ctg	tat	ttt	ggg	agg	gct	caa	ctc	cgc	cgg	974
Leu	Asn	Pro	Met	Leu	Phe	Leu	Tyr	Phe	Gly	Arg	Ala	Gln	Leu	Arg	Arg	
					290			295			300					
tca	ctg	cca	gct	tgt	cac	tgg	gcc	ctg	agg	gag	tcc	cag	ggc	cag		1022
Ser	Leu	Pro	Ala	Ala	Cys	His	Trp	Ala	Leu	Arg	Glu	Ser	Gln	Gly	Gln	
					305			310			315					
gac	gaa	agt	gtg	gac	agc	aag	aaa	tcc	acc	agc	cat	gac	ctg	gtc	tcg	1070
Asp	Glu	Ser	Val	Asp	Ser	Lys	Lys	Ser	Thr	Ser	His	Asp	Leu	Val	Ser	
					320			325			330					
gag	atg	gag	gtg	tag	gctggagaga	cattgtgggt	gtgtatcttc	ttatctcatt								1125
Glu	Met	Glu	Val													
			335													
tcacaagact	ggcttcaggc	atagctggat	ccaggagctc	aatgatgtct	tcatttttatt											1185
ccttccttca	ttcaacagat	atccatcatg	cacttgctat	gtgcaaggcc	tttttaggca											1245
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 <213> Homo sapiens
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Ser Asp Arg Pro Val Asp Cys Leu Asp Gly Ala Cys Leu Ala Ile Asp

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20

25

30

Pro Leu Arg Val Ala Pro Leu Pro Leu Tyr Ala Ala Ile Phe Leu Val
35 40 45

Gly Val Pro Gly Asn Ala Met Val Ala Trp Val Ala Gly Lys Val Ala
50 55 60

Arg Arg Arg Val Gly Ala Thr Trp Leu Leu His Leu Ala Val Ala Asp
65 70 75 80

Leu Leu Cys Cys Leu Ser Leu Pro Ile Leu Ala Val Pro Ile Ala Arg
85 90 95

Gly Gly His Trp Pro Tyr Gly Ala Val Gly Cys Arg Ala Leu Pro Ser
100 105 110

Ile Ile Leu Leu Thr Met Tyr Ala Ser Val Leu Leu Ala Ala Leu
115 120 125

Ser Ala Asp Leu Cys Phe Leu Ala Leu Gly Pro Ala Trp Trp Ser Thr
130 135 140

Val Gln Arg Ala Cys Gly Val Gln Val Ala Cys Gly Ala Ala Trp Thr
145 150 155 160

Leu Ala Leu Leu Leu Thr Val Pro Ser Ala Ile Tyr Arg Arg Leu His
165 170 175

Gln Glu His Phe Pro Ala Arg Leu Gln Cys Val Val Asp Tyr Gly Gly
180 185 190

Ser Ser Ser Thr Glu Asn Ala Val Thr Ala Ile Arg Phe Leu Phe Gly
195 200 205

Phe Leu Gly Pro Leu Val Ala Val Ala Ser Cys His Ser Ala Leu Leu
210 215 220

Cys Trp Ala Ala Arg Arg Cys Arg Pro Leu Gly Thr Ala Ile Val Val
225 230 235 240

Gly Phe Phe Val Cys Trp Ala Pro Tyr His Leu Leu Gly Leu Val Leu
245 250 255

Thr Val Ala Ala Pro Asn Ser Ala Leu Leu Ala Arg Ala Leu Arg Ala
260 265 270

Glu Pro Leu Ile Val Gly Leu Ala Leu Ala His Ser Cys Leu Asn Pro
 275 280 285

Met Leu Phe Leu Tyr Phe Gly Arg Ala Gln Leu Arg Arg Ser Leu Pro
 290 295 300

Ala Ala Cys His Trp Ala Leu Arg Glu Ser Gln Gly Gln Asp Glu Ser
 305 310 315 320

Val Asp Ser Lys Lys Ser Thr Ser His Asp Leu Val Ser Glu Met Glu
 325 330 335

Val

<210> 18
 <211> 2858
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (174) .. (1175)

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tgttttcttt tgtttgtata tatgtttatt ggtaacaggt gacactggaa gca atg 176
 Met
 1

aac acc aca gtg atg caa ggc ttc aac aga tct gag cgg tgc ccc aga 224
 Asn Thr Thr Val Met Gln Gly Phe Asn Arg Ser Glu Arg Cys Pro Arg
 5 10 15

gac act cgg ata gta cag ctg gta ttc cca gcc ctc tac aca gtg gtt 272
 Asp Thr Arg Ile Val Gln Leu Val Phe Pro Ala Leu Tyr Thr Val Val
 20 25 30

ttc ttg acc ggc atc ctg ctg aat act ttg gct ctg tgg gtg ttt gtt 320
 Phe Leu Thr Gly Ile Leu Leu Asn Thr Leu Ala Leu Trp Val Phe Val
 35 40 45

cac atc ccc agc tcc tcc acc ttc atc atc tac ctc aaa aac act ttg 368
 His Ile Pro Ser Ser Thr Phe Ile Ile Tyr Leu Lys Asn Thr Leu
 50 55 60 65

gtg gcc gac ttg ata atg aca ctc atg ctt cct ttc aaa atc ctc tct 416
 Val Ala Asp Leu Ile Met Thr Leu Met Leu Pro Phe Lys Ile Leu Ser
 70 75 80

gac tca cac ctg gca ccc tgg cag ctc aga gct ttt gtg tgt cgt ttt 464
 Asp Ser His Leu Ala Pro Trp Gln Leu Arg Ala Phe Val Cys Arg Phe

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85	90	95	
tct tcg gtg ata ttt tat gag acc atg tat gtg ggc atc gtg ctg tta Ser Ser Val Ile Phe Tyr Glu Thr Met Tyr Val Gly Ile Val Leu Leu 100	105	110	512
ggg ctc ata gcc ttt gac aga ttc ctc aag atc atc aga cct ttg aga Gly Leu Ile Ala Phe Asp Arg Phe Leu Lys Ile Ile Arg Pro Leu Arg 115	120	125	560
aat att ttt cta aaa aaa cct gtt ttt gca aaa acg gtc tca atc ttc Asn Ile Phe Leu Lys Lys Pro Val Phe Ala Lys Thr Val Ser Ile Phe 130	135	140	608
atc tgg ttc ttt ttg ttc atc tcc ctg cca aat acg atc ttg agc Ile Trp Phe Phe Leu Phe Ile Ser Leu Pro Asn Thr Ile Leu Ser 150	155	160	656
aac aag gaa gca aca cca tcg tct gtg aaa aag tgt gct tcc tta aag Asn Lys Glu Ala Thr Pro Ser Ser Val Lys Lys Cys Ala Ser Leu Lys 165	170	175	704
ggg cct ctg ggg ctg aaa tgg cat caa atg gta aat aac ata tgc cag Gly Pro Leu Gly Leu Lys Trp His Gln Met Val Asn Asn Ile Cys Gln 180	185	190	752
ttt att ttc tgg act gtt ttt atc cta atg ctt gtg ttt tat gtg gtt Phe Ile Phe Trp Thr Val Phe Ile Leu Met Leu Val Phe Tyr Val Val 195	200	205	800
att gca aaa aaa gta tat gat tct tat aga aag tcc aaa agt aag gac Ile Ala Lys Lys Val Tyr Asp Ser Tyr Arg Lys Ser Lys Ser Lys Asp 210	215	220	848
aga aaa aac aac aaa aag ctg gaa ggc aaa gta ttt gtt gtc gtg gct Arg Lys Asn Asn Lys Lys Leu Glu Gly Lys Val Phe Val Val Ala 230	235	240	896
gtc ttc ttt gtg tgt ttt gct cca ttt cat ttt gcc aga gtt cca tat Val Phe Phe Val Cys Phe Ala Pro Phe His Phe Ala Arg Val Pro Tyr 245	250	255	944
act cac agt caa acc aac aat aag act gac tgt aga ctg caa aat caa Thr His Ser Gln Thr Asn Asn Lys Thr Asp Cys Arg Leu Gln Asn Gln 260	265	270	992
ctg ttt att gct aaa gaa aca act ctc ttt ttg gca gca act aac att Leu Phe Ile Ala Lys Glu Thr Thr Leu Phe Leu Ala Ala Thr Asn Ile 275	280	285	1040
tgt atg gat ccc tta ata tac ata ttc tta tgt aaa aaa ttc aca gaa Cys Met Asp Pro Leu Ile Tyr Ile Phe Leu Cys Lys Lys Phe Thr Glu 290	295	300	1088
aag cta cca tgt atg caa ggg aga aag acc aca gca tca agc caa gaa Lys Leu Pro Cys Met Gln Gly Arg Lys Thr Thr Ala Ser Ser Gln Glu 310	315	320	1136
aat cat agc agt cag aca gac aac ata acc tta ggc tga caactgtaca Asn His Ser Ser Gln Thr Asp Asn Ile Thr Leu Gly 325	330		1185

tagggtaac ttctatttat tgatgagact tccgtagata atgtggaaat caaatttaac	1245
caagaaaaaa agattggaac aaatgctc ttacattta ttatcctcg gtacagaaaa	1305
gattatataa aatttaaatac cacatagatc tattcataag ctgaatgaac cattactaag	1365
agaatgcaac aggatacaaa tggccactag aggtcattat ttctttctt ctttttttt	1425
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aacccaatca cccctccctc tgtatgtgt cacacctata ttattaaact tatcacattg	2745
cattgtaatt acttcctgac ctttgtatct actcttttag taactgatgt atatatctga	2805
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<210> 19

<211> 333

<212> PRT

<213> Homo sapiens

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<400> 19

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Arg Asp Thr Arg Ile Val Gln Leu Val Phe Pro Ala Leu Tyr Thr Val
20 25 30

Val Phe Leu Thr Gly Ile Leu Leu Asn Thr Leu Ala Leu Trp Val Phe
35 40 45

Val His Ile Pro Ser Ser Thr Phe Ile Ile Tyr Leu Lys Asn Thr
50 55 60

Leu Val Ala Asp Leu Ile Met Thr Leu Met Leu Pro Phe Lys Ile Leu
65 70 75 80

Ser Asp Ser His Leu Ala Pro Trp Gln Leu Arg Ala Phe Val Cys Arg
85 90 95

Phe Ser Ser Val Ile Phe Tyr Glu Thr Met Tyr Val Gly Ile Val Leu
100 105 110

Leu Gly Leu Ile Ala Phe Asp Arg Phe Leu Lys Ile Ile Arg Pro Leu
115 120 125

Arg Asn Ile Phe Leu Lys Lys Pro Val Phe Ala Lys Thr Val Ser Ile
130 135 140

Phe Ile Trp Phe Phe Leu Phe Phe Ile Ser Leu Pro Asn Thr Ile Leu
145 150 155 160

Ser Asn Lys Glu Ala Thr Pro Ser Ser Val Lys Lys Cys Ala Ser Leu
165 170 175

Lys Gly Pro Leu Gly Leu Lys Trp His Gln Met Val Asn Asn Ile Cys
180 185 190

Gln Phe Ile Phe Trp Thr Val Phe Ile Leu Met Leu Val Phe Tyr Val
195 200 205

Val Ile Ala Lys Lys Val Tyr Asp Ser Tyr Arg Lys Ser Lys Ser Lys
210 215 220

Asp Arg Lys Asn Asn Lys Lys Leu Glu Gly Lys Val Phe Val Val Val
225 230 235 240

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Ala Val Phe Phe Val Cys Phe Ala Pro Phe His Phe Ala Arg Val Pro
245 250 255

Tyr Thr His Ser Gln Thr Asn Asn Lys Thr Asp Cys Arg Leu Gln Asn
 260 265 270

Gln Leu Phe Ile Ala Lys Glu Thr Thr Leu Phe Leu Ala Ala Thr Asn
 275 280 285

Ile Cys Met Asp Pro Leu Ile Tyr Ile Phe Leu Cys Lys Lys Phe Thr
 290 295 300

Glu Lys Leu Pro Cys Met Gln Gly Arg Lys Thr Thr Ala Ser Ser Gln
 305 310 315 320

Glu Asn His Ser Ser Gln Thr Asp Asn Ile Thr Leu Gly
325 330

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<211> 878
<212> DNA
<213> Homo sapiens
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atctcttaaa tatgtggcaa actatttgc caaagagatg tggtccaaac ccgtcgaagg 120
ctttataatt tggtattttaga taacaaggtg aacaaaactg acaataaata ctccaaacgaa 180
ttatTTTTaa aaataactaag gggcaaaggc tattctaagg ggcaaaacaa tctattactc
agacctacct gaaaatttca cgtgaagtcg atcaaaaagtt atacaaaatt ggtatttaca 240
tgTTTaaaat ccggattggc atTTTcttt aataataata catacaaaaa ctcagagggt 300
taataaaagaa ataattcaaa gtcctaataa gtcaacaaac agatttcatt ataagctgga 360
acataaaaga gacaccatgg ttggctgtct ctTTTcaaaa attatcacgg ccacttggc
aaacgggaag cagcattcag aacaatggtt ctcaaatttc ggggtggcat aaacaccatg 420
caggttggtt accacacaga ttccctggcc tgTTTccagt ctgaagctct cataaaggat 480
ctgaggaatc tgcttcgtga caagattcag actatttatt tatttacac ccaagctgga 540
gtgcaggggt gcaacccggt cagggaaacct cgcctcggag taaaagggaa accaaatcgg 600
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<211> 1646
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gat aat gca gag ctg ggg tca gcc tct gcc cat ggt acc cca ggc agt Asp Asn Ala Glu Leu Gly Ser Ala Ser Ala His Gly Thr Pro Gly Ser 10 15 20	116
gag acg gga cca gaa gag ctg aat act tct gtc tac cac ccc ata aat Glu Thr Gly Pro Glu Leu Asn Thr Ser Val Tyr His Pro Ile Asn 25 30 35	164
gga tca cca gat tat cag aaa gca aaa tta caa gtt ctt ggg gcc atc Gly Ser Pro Asp Tyr Gln Lys Ala Lys Leu Gln Val Leu Gly Ala Ile 40 45 50	212
cag atc ctg aat gca gca atg att ctg gct ttg ggt gtc ttt ctg ggt Gln Ile Leu Asn Ala Ala Met Ile Leu Ala Leu Gly Val Phe Leu Gly 55 60 65 70	260
tcc ttg caa tac cca tac cac ttc caa aag cac ttc ttt ttc acc Ser Leu Gln Tyr Pro Tyr His Phe Gln Lys His Phe Phe Phe Phe Thr 75 80 85	308
ttc tac aca ggc tac ccg att tgg ggt gct gtg ttt ttc tgc ttt agt tca Phe Tyr Thr Gly Tyr Pro Ile Trp Gly Ala Val Phe Phe Cys Ser Ser 90 95 100	356
gga acc ttg tct gtt gta gca ggg ata aaa ccc aca aga aca tgg ata Gly Thr Leu Ser Val Val Ala Gly Ile Lys Pro Thr Arg Thr Trp Ile 105 110 115	404
cag aac agt ttt gga atg aac att gcc agt gct aca att gca cta gtg Gln Asn Ser Phe Gly Met Asn Ile Ala Ser Ala Thr Ile Ala Leu Val 120 125 130	452
ggg act gct ttt ctc tca cta aat ata gca gtt aat atc cag tca tta Gly Thr Ala Phe Leu Ser Leu Asn Ile Ala Val Asn Ile Gln Ser Leu 135 140 145 150	500
agg agt tgt cac tct tca tca gag tca ccg gac cta tgc aat tac atg Arg Ser Cys His Ser Ser Ser Glu Ser Pro Asp Leu Cys Asn Tyr Met 155 160 165	548
ggc tcc ata tca aat ggc atg gtg tct cta ctg ctg att ctc acc ttg Gly Ser Ile Ser Asn Gly Met Val Ser Leu Leu Ile Leu Thr Leu 170 175 180	596
ctg gaa tta tgc gta act atc tct acc ata gcc atg tgg tgc aat gca Leu Glu Leu Cys Val Thr Ile Ser Thr Ile Ala Met Trp Cys Asn Ala	644
	692

- 43 -

	185	190	195	
aac tgc tgt aat tca aga gag gaa att tcc tca cct ccc aat tct gtg				740
Asn Cys Cys Asn Ser Arg Glu Glu Ile Ser Ser Pro Pro Asn Ser Val				
200	205	210		
taa tcaagaatac ctccttatga aaataattct gagagcatga atatttgacc				793
ttaaatctcc agtgactcag agttcaccc acaaactcag gagaacataa gcctgcttgt				853
aaagctcaat ccttctatca tggcaccaat cacaagaacc ttggacgttt gactgactct				913
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cagaaattgg ttctatccat tcttatccac ctactccatt gctttatgag gtttaaggaa				1093
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aatctgacac atctgggttc aaattctgaa actgtcactt attacctgta tgaacatgg				1513
caaattatct aatctctctg atctatttt cctcatctgt aaaataggtg taataataac				1573
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<210> 22
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 <212> PRT
 <213> Homo sapiens

<400> 22

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His Gly Thr Pro Gly Ser Glu Thr Gly Pro Glu Glu Leu Asn Thr Ser			
20	25	30	

Val Tyr His Pro Ile Asn Gly Ser Pro Asp Tyr Gln Lys Ala Lys Leu			
35	40	45	

Gln Val Leu Gly Ala Ile Gln Ile Leu Asn Ala Ala Met Ile Leu Ala			
50	55	60	

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Leu Gly Val Phe Leu Gly Ser Leu Gln Tyr Pro Tyr His Phe Gln Lys
65 70 75 80

His Phe Phe Phe Thr Phe Tyr Thr Gly Tyr Pro Ile Trp Gly Ala
85 90 95

Val Phe Phe Cys Ser Ser Gly Thr Leu Ser Val Val Ala Gly Ile Lys
100 105 110

Pro Thr Arg Thr Trp Ile Gln Asn Ser Phe Gly Met Asn Ile Ala Ser
115 120 125

Ala Thr Ile Ala Leu Val Gly Thr Ala Phe Leu Ser Leu Asn Ile Ala
130 135 140

Val Asn Ile Gln Ser Leu Arg Ser Cys His Ser Ser Ser Glu Ser Pro
145 150 155 160

Asp Leu Cys Asn Tyr Met Gly Ser Ile Ser Asn Gly Met Val Ser Leu
165 170 175

Leu Leu Ile Leu Thr Leu Leu Glu Leu Cys Val Thr Ile Ser Thr Ile
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Ala Met Trp Cys Asn Ala Asn Cys Cys Asn Ser Arg Glu Glu Ile Ser
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Ser Pro Pro Asn Ser Val
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gcacggcaga gagtctggtg gggtggaggg gctggcctgg cccctctgtc ctgtggaa 178
atg ctg ggg caa gtg gtc acc ctc ata ctc ctc ctg ctc aag gtg 226
Met Leu Gly Gln Val Val Thr Leu Ile Leu Leu Leu Lys Val
1 5 10 15

tat cag ggc aaa gga tgc cag gga tca gct gac cat gtg gtt agc atc 274

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Tyr Gln Gly Lys Gly Cys Gln Gly Ser Ala Asp His Val Val Ser Ile			
20	25	30	
tcg gga gtg cct ctt cag tta caa cca aac agc ata cag acg aag gtt			322
Ser Gly Val Pro Leu Gln Leu Gln Pro Asn Ser Ile Gln Thr Lys Val			
35	40	45	
gac agc att gca tgg aag aag ttg ctg ccc tca caa aat gga ttt cat			370
Asp Ser Ile Ala Trp Lys Lys Leu Pro Ser Gln Asn Gly Phe His			
50	55	60	
cac ata ttg aag tgg gag aat ggc tct ttg cct tcc aat act tcc aat			418
His Ile Leu Lys Trp Glu Asn Gly Ser Leu Pro Ser Asn Thr Ser Asn			
65	70	75	80
gat aga ttc agt ttt ata gtc aag aac ttg agt ctt ctc atc aag gca			466
Asp Arg Phe Ser Phe Ile Val Lys Asn Leu Ser Leu Leu Ile Lys Ala			
85	90	95	
gct cag cag cag gac agt ggc ctc tac tgc ctg gag gtc acc agt ata			514
Ala Gln Gln Gln Asp Ser Gly Leu Tyr Cys Leu Glu Val Thr Ser Ile			
100	105	110	
tct gga aaa gtt cag aca gcc acg ttc cag gtt ttt gta ttt gat aaa			562
Ser Gly Lys Val Gln Thr Ala Thr Phe Gln Val Phe Val Phe Asp Lys			
115	120	125	
gtt gag aaa ccc cgc cta cag ggg cag ggg aag atc ctg gac aga ggg			610
Val Glu Lys Pro Arg Leu Gln Gly Gln Gly Lys Ile Leu Asp Arg Gly			
130	135	140	
aga tgc caa gtg gct ctg tct tgc ttg gtc tcc agg gat ggc aat gtg			658
Arg Cys Gln Val Ala Leu Ser Cys Leu Val Ser Arg Asp Gly Asn Val			
145	150	155	160
tcc tat gct tgg tac aga ggg agc aag ctg atc cag aca gca ggg aac			706
Ser Tyr Ala Trp Tyr Arg Gly Ser Lys Leu Ile Gln Thr Ala Gly Asn			
165	170	175	
ctc acc tac ctg gac gag gag gtt gac att aat ggc act cac aca tat			754
Leu Thr Tyr Leu Asp Glu Val Asp Ile Asn Gly Thr His Thr Tyr			
180	185	190	
acc tgc aat gtc agc aat cct gtt agc tgg gaa agc cac acc ctg aat			802
Thr Cys Asn Val Ser Asn Pro Val Ser Trp Glu Ser His Thr Leu Asn			
195	200	205	
ctc act cag gac tgt cag aat gcc cat cag gaa ttc aga ttt tgg ccg			850
Leu Thr Gln Asp Cys Gln Asn Ala His Gln Glu Phe Arg Phe Trp Pro			
210	215	220	
ttt ttg gtg atc atc gtg att cta agc gca ctg ttc ctt ggc acc ctt			898
Phe Leu Val Ile Ile Val Ile Leu Ser Ala Leu Phe Leu Gly Thr Leu			
225	230	235	240
gcc tgc ttc tgt gtg tgg agg aga aag agg aag gag aag cag tca gag			946
Ala Cys Phe Cys Val Trp Arg Arg Lys Arg Lys Glu Lys Gln Ser Glu			
245	250	255	
acc agt ccc aag gaa ttt ttg aca att tac gaa gat gtc aag gat ctg			994
Thr Ser Pro Lys Glu Phe Leu Thr Ile Tyr Glu Asp Val Lys Asp Leu			
260	265	270	

aaa acc agg aga aat cac gag cag gag cag act ttt cct gga ggg ggg	1042
Lys Thr Arg Arg Asn His Glu Gln Glu Gln Thr Phe Pro Gly Gly Gly	
275 280 285	
agc acc atc tac tct atg atc cag tcc cag tct tct gct ccc acg tca	1090
Ser Thr Ile Tyr Ser Met Ile Gln Ser Gln Ser Ala Pro Thr Ser	
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caa gaa cct gca tat aca tta tat tca tta att cag cct tcc agg aag	1138
Gln Glu Pro Ala Tyr Thr Leu Tyr Ser Leu Ile Gln Pro Ser Arg Lys	
305 310 315 320	
tct gga tcc agg aag agg aac cac agc cct tcc ttc aat agc act atc	1186
Ser Gly Ser Arg Lys Arg Asn His Ser Pro Ser Phe Asn Ser Thr Ile	
325 330 335	
tat gaa gtg att gga aag agt caa cct aaa gcc cag aac cct gct cga	1234
Tyr Glu Val Ile Gly Lys Ser Gln Pro Lys Ala Gln Asn Pro Ala Arg	
340 345 350	
ttg agc cgc aaa gag ctg gag aac ttt gat gtt tat tcc tag	1276
Leu Ser Arg Lys Glu Leu Glu Asn Phe Asp Val Tyr Ser	
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20 25 30

Ser Gly Val Pro Leu Gln Leu Gln Pro Asn Ser Ile Gln Thr Lys Val
35 40 45

Asp Ser Ile Ala Trp Lys Lys Leu Leu Pro Ser Gln Asn Gly Phe His
50 55 60

His Ile Leu Lys Trp Glu Asn Gly Ser Leu Pro Ser Asn Thr Ser Asn
65 70 75 80

Asp Arg Phe Ser Phe Ile Val Lys Asn Leu Ser Leu Leu Ile Lys Ala
85 90 95

Ala Gln Gln Gln Asp Ser Gly Leu Tyr Cys Leu Glu Val Thr Ser Ile
100 105 110

Ser Gly Lys Val Gln Thr Ala Thr Phe Gln Val Phe Val Phe Asp Lys
115 120 125

Val Glu Lys Pro Arg Leu Gln Gly Gln Gly Lys Ile Leu Asp Arg Gly
130 135 140

Arg Cys Gln Val Ala Leu Ser Cys Leu Val Ser Arg Asp Gly Asn Val
145 150 155 160

Ser Tyr Ala Trp Tyr Arg Gly Ser Lys Leu Ile Gln Thr Ala Gly Asn
165 170 175

Leu Thr Tyr Leu Asp Glu Glu Val Asp Ile Asn Gly Thr His Thr Tyr
180 185 190

Thr Cys Asn Val Ser Asn Pro Val Ser Trp Glu Ser His Thr Leu Asn

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195

200

205

Leu Thr Gln Asp Cys Gln Asn Ala His Gln Glu Phe Arg Phe Trp Pro
 210 215 220

Phe Leu Val Ile Ile Val Ile Leu Ser Ala Leu Phe Leu Gly Thr Leu
 225 230 235 240

Ala Cys Phe Cys Val Trp Arg Arg Lys Arg Lys Glu Lys Gln Ser Glu
 245 250 255

Thr Ser Pro Lys Glu Phe Leu Thr Ile Tyr Glu Asp Val Lys Asp Leu
 260 265 270

Lys Thr Arg Arg Asn His Glu Gln Glu Gln Thr Phe Pro Gly Gly
 275 280 285

Ser Thr Ile Tyr Ser Met Ile Gln Ser Gln Ser Ser Ala Pro Thr Ser
 290 295 300

Gln Glu Pro Ala Tyr Thr Leu Tyr Ser Leu Ile Gln Pro Ser Arg Lys
 305 310 315 320

Ser Gly Ser Arg Lys Arg Asn His Ser Pro Ser Phe Asn Ser Thr Ile
 325 330 335

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 tttggtggag gcaacgccaa gcctgagtc ttcttcctc tcgttccccca aatccgaggc 180
 240

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ccccgggctc	gtcgctttct	ccatcccac	ccagccgggg	cgcggggaca	acacaggctg	420
cggaggagcg	ttgccattca	agtgactgca	gcagcagcgg	cagcgcctcg	gttcctgagc	480
ccacccgcagg	ctgaaggcat	tgcgcgtagt	ccatgcccgt	agaggaagtg	tgcagatggg	540
attaacgtcc	acatggagat	atgaaagagg	accggggatt	ggtaccgtaa	cc atg gtc	598
					Met Val	
					1	
agc tgg ggt	cgt ttc atc	tgc ctg gtc	gtg gtc acc	atg gca acc	ttg	646
Ser Trp	Gly Arg	Phe Ile	Cys Leu	Val Val	Val Thr	
5	10	15				
tcc ctg gcc cgg	ccc tcc ttc	agt tta gtt	gag gat	acc aca tta	gag	694
Ser Leu	Ala Arg	Pro Ser	Phe Ser	Leu Val	Glu Asp	
20	25	30				
cca gaa gag	cca cca acc	aaa tac caa	atc tct caa	cca gaa	gtg tac	742
Pro Glu	Glu Pro	Pro Thr	Lys Tyr	Gln Ile	Ser Gln	
35	40	45				
gtg gct gcg	cca ggg gag	tcg cta gag	gtg cgc tgc	ctg ttg	aaa gat	790
Val Ala	Ala Pro	Gly Glu	Ser Leu	Glu Val	Arg Cys	
55	60	65				
gcc gcc gtg	atc agt tgg	act aag gat	ggg gtg	cac ttg	ggg ccc aac	838
Ala Ala Val	Ile Ser Trp	Thr Lys Asp	Gly Val	His Leu	Gly Pro Asn	
70	75	80				
aat agg aca	gtg ctt att	ggg gag tac	ttg cag	ata aag	ggc gcc acg	886
Asn Arg	Thr Val	Leu Ile	Gly Glu	Tyr Leu	Gln Ile Lys	
85	90	95				
cct aga gac	tcc ggc ctc	tat gct	tgt act	gcc agt	agg act gta gac	934
Pro Arg	Asp Ser	Gly Leu	Tyr Ala	Cys Thr	Ala Ser Arg	
100	105	110				
agt gaa act	tgg tac ttc	atg gtg	aat gtc	aca gat	gcc atc tca tcc	982
Ser Glu	Thr Trp	Tyr Phe	Met Val	Asn Val	Thr Asp Ala	
115	120	125				
gga gat	gat gag	gat gac	acc gat	ggt gcg	gaa gat	1030
Gly Asp	Asp Asp	Asp Thr	Asp Gly	Ala Glu	Asp Phe	
135	140	145				
aac agt aac	aac aag	aga gca	cca tac	tgg acc	aac aca gaa	1078
Asn Ser	Asn Asn	Lys Arg	Ala Pro	Tyr Trp	Thr Asn	
150	155	160				
gaa aag cgg	ctc cat	gct gtg	cct gcg	gcc aac	act gtc	1126
Glu Lys	Arg Leu	His Ala	Val Pro	Ala Ala	Asn Thr	
165	170	175				
tgc cca	gcc ggg	ggg aac	cca atg	cca acc	atg cgg	1174
Cys Pro	Ala Gly	Gly Asn	Pro Met	Pro Thr	Met Arg	
180	185	190				

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ggg aag gag ttt aag cag gag cat cgc att gga ggc tac aag gta cga	1222
Gly Lys Glu Phe Lys Gln Glu His Arg Ile Gly Gly Tyr Lys Val Arg	
195 200 205 210	
aac cag cac tgg agc ctc att atg gaa agt gtg gtc cca tct gac aag	1270
Asn Gln His Trp Ser Leu Ile Met Glu Ser Val Val Pro Ser Asp Lys	
215 220 225	
gga aat tat acc tgt gtg gtg gag aat gaa tac ggg tcc atc aat cac	1318
Gly Asn Tyr Thr Cys Val Val Glu Asn Glu Tyr Gly Ser Ile Asn His	
230 235 240	
acg tac cac ctg gat gtt gtg gag cga tcg cct cac cgg ccc atc ctc	1366
Thr Tyr His Leu Asp Val Val Glu Arg Ser Pro His Arg Pro Ile Leu	
245 250 255	
caa gcc gga ctg ccg gca aat gcc tcc aca gtg gtc gga gga gac gta	1414
Gln Ala Gly Leu Pro Ala Asn Ala Ser Thr Val Val Gly Gly Asp Val	
260 265 270	
gag ttt gtc tgc aag gtt tac agt gat gcc cag ccc cac atc cag tgg	1462
Glu Phe Val Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp	
275 280 285 290	
atc aag cac gtg gaa aag aac ggc agt aaa tac ggg ccc gac ggg ctg	1510
Ile Lys His Val Glu Lys Asn Gly Ser Lys Tyr Gly Pro Asp Gly Leu	
295 300 305	
ccc tac ctc aag gtt ctc aag cac tcg ggg ata aat agt tcc aat gca	1558
Pro Tyr Leu Lys Val Leu Lys His Ser Gly Ile Asn Ser Asn Ala	
310 315 320	
gaa gtg ctg gct ctg ttc aat gtg acc gag gcg gat gct ggg gaa tat	1606
Glu Val Leu Ala Leu Phe Asn Val Thr Glu Ala Asp Ala Gly Glu Tyr	
325 330 335	
ata tgt aag gtc tcc aat tat ata ggg cag gcc aac cag tct gcc tgg	1654
Ile Cys Lys Val Ser Asn Tyr Ile Gly Gln Ala Asn Gln Ser Ala Trp	
340 345 350	
ctc act gtc ctg cca aaa cag caa gcg cct gga aga gaa aag gag att	1702
Leu Thr Val Leu Pro Lys Gln Gln Ala Pro Gly Arg Glu Lys Glu Ile	
355 360 365 370	
aca gct tcc cca gac tac ctg gag ata gcc att tac tgc ata ggg gtc	1750
Thr Ala Ser Pro Asp Tyr Leu Glu Ile Ala Ile Tyr Cys Ile Gly Val	
375 380 385	
ttc tta atc gcc tgt atg gtg gta aca gtc atc ctg tgc cga atg aag	1798
Phe Leu Ile Ala Cys Met Val Val Thr Val Ile Leu Cys Arg Met Lys	
390 395 400	
aac acg acc aag aag cca gac ttc agc agc cag ccg gct gtg cac aag	1846
Asn Thr Thr Lys Lys Pro Asp Phe Ser Ser Gln Pro Ala Val His Lys	
405 410 415	
ctg acc aaa cgt atc ccc ctg cgg aga cag gta aca gtt tcg gct gag	1894
Leu Thr Lys Arg Ile Pro Leu Arg Arg Gln Val Thr Val Ser Ala Glu	
420 425 430	
tcc agc tcc tcc atg aac tcc aac acc ccg ctg gtg agg ata aca aca	1942
Ser Ser Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile Thr Thr	

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435	440	445	450	
cgc ctc tct tca acg gca gac acc ccc atg ctg gca ggg gtc tcc gag Arg Leu Ser Ser Thr Ala Asp Thr Pro Met Leu Ala Gly Val Ser Glu 455				1990
460				465
tat gaa ctt cca gag gac cca aaa tgg gag ttt cca aga gat aag ctg Tyr Glu Leu Pro Glu Asp Pro Lys Trp Glu Phe Pro Arg Asp Lys Leu 470				2038
475				480
aca ctg ggc aag ccc ctg gga gaa ggt tgc ttt ggg caa gtg gtc atg Thr Leu Gly Lys Pro Leu Gly Glu Cys Phe Gly Gln Val Val Met 485				2086
490				495
gcg gaa gca gtg gga att gac aaa gac aag ccc aag gag gcg gtc acc Ala Glu Ala Val Gly Ile Asp Lys Asp Lys Pro Lys Glu Ala Val Thr 500				2134
505				510
gtg gcc gtg aag atg ttg aaa gat gat gcc aca gag aaa gac ctt tct Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Glu Lys Asp Leu Ser 515				2182
520				525
gat ctg gtg tca gag atg gag atg aag atg att ggg aaa cac aag Asp Leu Val Ser Glu Met Met Lys Met Ile Gly Lys His Lys 535				2230
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aat atc ata aat ctt ctt gga gcc tgc aca cag gat ggg cct ctc tat Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Asp Gly Pro Leu Tyr 550				2278
555				560
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gcc cgg agg cca ccc ggg atg gag tac tcc tat gac att aac cgt gtt Ala Arg Arg Pro Pro Gly Met Glu Tyr Ser Tyr Asp Ile Asn Arg Val 580				2374
585				590
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600				605
610				610
ctg gcc aga ggc atg gag tac ttg gct tcc caa aaa tgt att cat cga Leu Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile His Arg 615				2470
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635				640
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650				655
aaa aag acc acc aat ggg cgg ctt cca gtc aag tgg atg gct cca gaa Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala Pro Glu 660				2614
665				670
gcc ctg ttt gat aga gta tac act cat cag agt gat gtc tgg tcc ttc Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp Ser Phe 675				2662
680				685
				690

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Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly His Arg	
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atg gat aag cca gcc aac tgc acc aac gaa ctg tac atg atg atg agg	2806
Met Asp Lys Pro Ala Asn Cys Thr Asn Glu Leu Tyr Met Met Met Arg	
725 730 735	
gac tgt tgg cat gca gtg ccc tcc cag aga cca acg ttc aag cag ttg	2854
Asp Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys Gln Leu	
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gta gaa gac ttg gat cga att ctc act ctc aca acc aat gag gaa tac	2902
Val Glu Asp Leu Asp Arg Ile Leu Thr Leu Thr Asn Glu Glu Tyr	
755 760 765 770	
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Leu Asp Leu Ser Gln Pro Leu Glu Gln Tyr Ser Pro Ser Tyr Pro Asp	
775 780 785	
aca aga agt tct tgt tct tca gga gat gat tct gtt ttt tct cca gac	2998
Thr Arg Ser Ser Cys Ser Ser Gly Asp Asp Ser Val Phe Ser Pro Asp	
790 795 800	
ccc atg cct tac gaa cca tgc ctt cct cag tat cca cac ata aac ggc	3046
Pro Met Pro Tyr Glu Pro Cys Leu Pro Gln Tyr Pro His Ile Asn Gly	
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caatatatga ctaatttggg gaaaatgaag ttttggatata aatgctgttc	3881

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Leu Glu Pro Glu Glu Pro Pro Thr Lys Tyr Gln Ile Ser Gln Pro Glu
 35 40 45

Val Tyr Val Ala Ala Pro Gly Glu Ser Leu Glu Val Arg Cys Leu Leu
 50 55 60

Lys Asp Ala Ala Val Ile Ser Trp Thr Lys Asp Gly Val His Leu Gly
 65 70 75 80

Pro Asn Asn Arg Thr Val Leu Ile Gly Glu Tyr Leu Gln Ile Lys Gly
 85 90 95

Ala Thr Pro Arg Asp Ser Gly Leu Tyr Ala Cys Thr Ala Ser Arg Thr
 100 105 110

Val Asp Ser Glu Thr Trp Tyr Phe Met Val Asn Val Thr Asp Ala Ile
 115 120 125

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.....

Ser Ser Gly Asp Asp Glu Asp Asp Thr Asp Gly Ala Glu Asp Phe Val
130 135 140

Ser Glu Asn Ser Asn Asn Lys Arg Ala Pro Tyr Trp Thr Asn Thr Glu
145 150 155 160

Lys Met Glu Lys Arg Leu His Ala Val Pro Ala Ala Asn Thr Val Lys
165 170 175

Phe Arg Cys Pro Ala Gly Gly Asn Pro Met Pro Thr Met Arg Trp Leu
180 185 190

Lys Asn Gly Lys Glu Phe Lys Gln Glu His Arg Ile Gly Gly Tyr Lys
195 200 205

Val Arg Asn Gln His Trp Ser Leu Ile Met Glu Ser Val Val Pro Ser
210 215 220

Asp Lys Gly Asn Tyr Thr Cys Val Val Glu Asn Glu Tyr Gly Ser Ile
225 230 235 240

Asn His Thr Tyr His Leu Asp Val Val Glu Arg Ser Pro His Arg Pro
245 250 255

Ile Leu Gln Ala Gly Leu Pro Ala Asn Ala Ser Thr Val Val Gly Gly
260 265 270

Asp Val Glu Phe Val Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile
275 280 285

Gln Trp Ile Lys His Val Glu Lys Asn Gly Ser Lys Tyr Gly Pro Asp
290 295 300

Gly Leu Pro Tyr Leu Lys Val Leu Lys His Ser Gly Ile Asn Ser Ser
305 310 315 320

Asn Ala Glu Val Leu Ala Leu Phe Asn Val Thr Glu Ala Asp Ala Gly
325 330 335

Glu Tyr Ile Cys Lys Val Ser Asn Tyr Ile Gly Gln Ala Asn Gln Ser
340 345 350

Ala Trp Leu Thr Val Leu Pro Lys Gln Gln Ala Pro Gly Arg Glu Lys
355 360 365

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Glu Ile Thr Ala Ser Pro Asp Tyr Leu Glu Ile Ala Ile Tyr Cys Ile
370 375 380

Gly Val Phe Leu Ile Ala Cys Met Val Val Thr Val Ile Leu Cys Arg
385 390 395 400

Met Lys Asn Thr Thr Lys Lys Pro Asp Phe Ser Ser Gln Pro Ala Val
405 410 415

His Lys Leu Thr Lys Arg Ile Pro Leu Arg Arg Gln Val Thr Val Ser
420 425 430

Ala Glu Ser Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile
435 440 445

Thr Thr Arg Leu Ser Ser Thr Ala Asp Thr Pro Met Leu Ala Gly Val
450 455 460

Ser Glu Tyr Glu Leu Pro Glu Asp Pro Lys Trp Glu Phe Pro Arg Asp
465 470 475 480

Lys Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val
485 490 495

Val Met Ala Glu Ala Val Gly Ile Asp Lys Asp Lys Pro Lys Glu Ala
500 505 510

Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Glu Lys Asp
515 520 525

Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys
530 535 540

His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Asp Gly Pro
545 550 555 560

Leu Tyr Val Ile Val Glu Tyr Ala Ser Lys Gly Asn Leu Arg Glu Tyr
565 570 575

Leu Arg Ala Arg Arg Pro Pro Gly Met Glu Tyr Ser Tyr Asp Ile Asn
580 585 590

Arg Val Pro Glu Glu Gln Met Thr Phe Lys Asp Leu Val Ser Cys Thr
595 600 605

Tyr Gln Leu Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile
610 615 620

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His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asn Asn Val
625 630 635 640

Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Ile Asn Asn Ile Asp
645 650 655

Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala
660 665 670

Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp
675 680 685

Ser Phe Gly Val Leu Met Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro
690 695 700

Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly
705 710 715 720

His Arg Met Asp Lys Pro Ala Asn Cys Thr Asn Glu Leu Tyr Met Met
725 730 735

Met Arg Asp Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys
740 745 750

Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Leu Thr Thr Asn Glu
755 760 765

Glu Tyr Leu Asp Leu Ser Gln Pro Leu Glu Gln Tyr Ser Pro Ser Tyr
770 775 780

Pro Asp Thr Arg Ser Ser Cys Ser Ser Gly Asp Asp Ser Val Phe Ser
785 790 795 800

Pro Asp Pro Met Pro Tyr Glu Pro Cys Leu Pro Gln Tyr Pro His Ile
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Asn Gly Ser Val Lys Thr
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1	5		
ttg cgc tgg acc gtc gcc ttg ctc ctc gcc gcg ggg act gca gtg		162	
Leu Arg Trp Thr Val Ala Leu Leu Ala Ala Ala Gly Thr Ala Val			
10	15	20	
ggc gac aga tgt gaa aga aac gag ttc cag tgc caa gac ggg aaa tgc		210	
Gly Asp Arg Cys Glu Arg Asn Glu Phe Gln Cys Gln Asp Gly Lys Cys			
25	30	35	
atc tcc tac aag tgg gtc tgc gat ggc agc gct gag tgc cag gat ggc		258	
Ile Ser Tyr Lys Trp Val Cys Asp Gly Ser Ala Glu Cys Gln Asp Gly			
40	45	50	55
tct gat gag tcc cag gag acg tgc ttg tct gtc acc tgc aaa tcc ggg		306	
Ser Asp Glu Ser Gln Glu Thr Cys Leu Ser Val Thr Cys Lys Ser Gly			
60	65	70	
gac ttc agc tgt ggg ggc cgt gtc aac cgc tgc att cct cag ttc tgg		354	
Asp Phe Ser Cys Gly Gly Arg Val Asn Arg Cys Ile Pro Gln Phe Trp			
75	80	85	
agg tgc gat ggc caa gtg gac tgc gac aac ggc tca gac gag caa ggc		402	
Arg Cys Asp Gly Gln Val Asp Cys Asp Asn Gly Ser Asp Glu Gln Gly			
90	95	100	
tgt ccc ccc aag acg tgc tcc cag gac gag ttt cgc tgc cac gat ggg		450	
Cys Pro Pro Lys Thr Cys Ser Gln Asp Glu Phe Arg Cys His Asp Gly			
105	110	115	
aag tgc atc tct cgg cag ttc gtc tgt gac tca gac cgg gac tgc ttg		498	
Lys Cys Ile Ser Arg Gln Phe Val Cys Asp Ser Asp Arg Asp Cys Leu			
120	125	130	135
gac ggc tca gac gag gcc tcc tgc ccg gtg ctc acc tgt ggt ccc gcc		546	
Asp Gly Ser Asp Glu Ala Ser Cys Pro Val Leu Thr Cys Gly Pro Ala			
140	145	150	
agc ttc cag tgc aac agc tcc acc tgc atc ccc cag ctg tgg gcc tgc		594	
Ser Phe Gln Cys Asn Ser Thr Cys Ile Pro Gln Leu Trp Ala Cys			
155	160	165	
gac aac gac ccc gac tgc gaa gat ggc tcg gat gag tgg ccg cag cgc		642	
Asp Asn Asp Pro Asp Cys Glu Asp Gly Ser Asp Glu Trp Pro Gln Arg			
170	175	180	
tgt agg ggt ctt tac gtg ttc caa ggg gac agt agc ccc tgc tcg gcc		690	
Cys Arg Gly Leu Tyr Val Phe Gln Gly Asp Ser Ser Pro Cys Ser Ala			
185	190	195	
ttc gag ttc cac tgc cta agt ggc gag tgc atc cac tcc agc tgg cgc		738	
Phe Glu Phe His Cys Leu Ser Gly Glu Cys Ile His Ser Ser Trp Arg			
200	205	210	215
tgt gat ggt ggc ccc gac tgc aag gac aaa tct gac gag gaa aac tgc		786	

Cys	Asp	Gly	Gly	Pro	Asp	Cys	Lys	Asp	Lys	Ser	Asp	Glu	Glu	Asn	Cys	
220						225			230							
gct	gtg	gcc	acc	tgt	cgc	cct	gac	gaa	ttc	cag	tgc	tct	gat	gga	aac	834
Ala	Val	Ala	Thr	Cys	Arg	Pro	Asp	Glu	Phe	Gln	Cys	Ser	Asp	Gly	Asn	
235				240							245					
tgc	atc	cat	ggc	agc	cgg	cag	tgt	gac	cgg	gaa	tat	gac	tgc	aag	gac	882
Cys	Ile	His	Gly	Ser	Arg	Gln	Cys	Asp	Arg	Glu	Tyr	Asp	Cys	Lys	Asp	
250			255								260					
atg	agc	gat	gaa	gtt	ggc	tgc	gtt	aat	gtg	aca	ctc	tgc	gag	gga	ccc	930
Met	Ser	Asp	Glu	Val	Gly	Cys	Val	Asn	Val	Thr	Leu	Cys	Glu	Gly	Pro	
265			270							275						
aac	aag	ttc	aag	tgt	cac	agc	ggc	gaa	tgc	atc	acc	ctg	gac	aaa	gtc	978
Asn	Lys	Phe	Lys	Cys	His	Ser	Gly	Glu	Cys	Ile	Thr	Leu	Asp	Lys	Val	
280		285						290				295				
tgc	aac	atg	gct	aga	gac	tgc	cgg	gac	tgg	tca	gat	gaa	ccc	atc	aaa	1026
Cys	Asn	Met	Ala	Arg	Asp	Cys	Arg	Asp	Trp	Ser	Asp	Glu	Pro	Ile	Lys	
300				305							310					
gag	tgc	ggg	acc	aac	gaa	tgc	ttg	gac	aac	aac	ggc	ggc	tgt	tcc	cac	1074
Glu	Cys	Gly	Thr	Asn	Glu	Cys	Leu	Asp	Asn	Asn	Gly	Gly	Cys	Ser	His	
315				320							325					
gtc	tgc	aat	gac	ctt	aag	atc	ggc	tac	gag	tgc	ctg	tgc	ccc	gac	ggc	1122
Val	Cys	Asn	Asp	Leu	Lys	Ile	Gly	Tyr	Glu	Cys	Leu	Cys	Pro	Asp	Gly	
330				335							340					
ttc	cag	ctg	gtg	gcc	cag	cga	aga	tgc	gaa	gat	atc	gat	gag	tgt	cag	1170
Phe	Gln	Leu	Val	Ala	Gln	Arg	Arg	Cys	Glu	Asp	Ile	Asp	Glu	Cys	Gln	
345				350							355					
gat	ccc	gac	acc	tgc	agc	cag	ctc	tgc	gtg	aac	ctg	gag	ggt	ggc	tac	1218
Asp	Pro	Asp	Thr	Cys	Ser	Gln	Leu	Cys	Val	Asn	Leu	Glu	Gly	Tyr		
360				365					370			375				
aag	tgc	cag	tgt	gag	gaa	ggc	ttc	cag	ctg	gac	ccc	cac	acg	aag	gcc	1266
Lys	Cys	Gln	Cys	Glu	Gly	Phe	Gln	Leu	Asp	Pro	His	Thr	Lys	Ala		
380				385							390					
tgc	aag	gct	gtg	ggc	tcc	atc	gcc	tac	ctc	ttc	ttc	acc	aac	cg	cac	1314
Cys	Lys	Ala	Val	Gly	Ser	Ile	Ala	Tyr	Leu	Phe	Phe	Thr	Asn	Arg	His	
395				400							405					
gag	gtc	agg	aag	atg	acg	ctg	gac	cgg	agc	gag	tac	acc	acg	ctc	atc	1362
Glu	Val	Arg	Lys	Met	Thr	Leu	Asp	Arg	Ser	Glu	Tyr	Thr	Ser	Leu	Ile	
410				415							420					
ccc	aac	ctg	agg	aac	gtg	gtc	gct	ctg	gac	acg	gag	gtg	gcc	agc	aat	1410
Pro	Asn	Leu	Arg	Asn	Val	Val	Ala	Leu	Asp	Thr	Glu	Val	Ala	Ser	Asn	
425				430							435					
aga	atc	tac	tgg	tct	gac	ctg	tcc	cag	aga	atg	atc	tgc	agc	acc	cag	1458
Arg	Ile	Tyr	Trp	Ser	Asp	Leu	Ser	Gln	Arg	Met	Ile	Cys	Ser	Thr	Gln	
440				445					450			455				
ctt	gac	aga	gcc	cac	ggc	gtc	tct	tcc	tat	gac	acc	gtc	atc	agc	agg	1506
Leu	Asp	Arg	Ala	His	Gly	Val	Ser	Ser	Tyr	Asp	Thr	Val	Ile	Ser	Arg	
460				465							470					

gac atc cag gcc ccc gac ggg ctg gct gtg gac tgg atc cac agc aac	475	480	485	1554
Asp Ile Gln Ala Pro Asp Gly Leu Ala Val Asp Trp Ile His Ser Asn				
atc tac tgg acc gac tct gtc ctg ggc act gtc tct gtt gcg gat acc	490	495	500	1602
Ile Tyr Trp Thr Asp Ser Val Leu Gly Thr Val Ser Val Ala Asp Thr				
aag ggc gtg aag agg aaa acg tta ttc agg gag aac ggc tcc aag cca	505	510	515	1650
Lys Gly Val Lys Arg Lys Thr Leu Phe Arg Glu Asn Gly Ser Lys Pro				
agg gcc atc gtg gtc gat cct gtt cat ggc ttc atg tac tgg act gac	520	525	530	1698
Arg Ala Ile Val Val Asp Pro Val His Gly Phe Met Tyr Trp Thr Asp				
tgg gga act ccc gcc aag atc aag aaa ggg ggc ctg aat ggt gtg gac	540	545	550	1746
Trp Gly Thr Pro Ala Lys Ile Lys Gly Gly Leu Asn Gly Val Asp				
atc tac tcg ctg gtg act gaa aac att cag tgg ccc aat ggc atc acc	555	560	565	1794
Ile Tyr Ser Leu Val Thr Glu Asn Ile Gln Trp Pro Asn Gly Ile Thr				
cta gat ctc ctc agt ggc cgc ctc tac tgg gtt gac tcc aaa ctt cac	570	575	580	1842
Leu Asp Leu Leu Ser Gly Arg Leu Tyr Trp Val Asp Ser Lys Leu His				
tcc atc tca agc atc gat gtc aat ggg ggc aac cgg aag acc atc ttg	585	590	595	1890
Ser Ile Ser Ser Ile Asp Val Asn Gly Asn Arg Lys Thr Ile Leu				
gag gat gaa aag agg ctg gcc cac ccc ttc tcc ttg gcc gtc ttt gag	600	605	610	1938
Glu Asp Glu Lys Arg Leu Ala His Pro Phe Ser Leu Ala Val Phe Glu				
gac aaa gta ttt tgg aca gat atc atc aac gaa gcc att ttc agt gcc	620	625	630	1986
Asp Lys Val Phe Trp Thr Asp Ile Ile Asn Glu Ala Ile Phe Ser Ala				
aac cgc ctc aca ggt tcc gat gtc aac ttg ttg gct gaa aac cta ctg	635	640	645	2034
Asn Arg Leu Thr Gly Ser Asp Val Asn Leu Leu Ala Glu Asn Leu Leu				
tcc cca gag gat atg gtc ctc ttc cac aac ctc acc cag cca aga gga	650	655	660	2082
Ser Pro Glu Asp Met Val Leu Phe His Asn Leu Thr Gln Pro Arg Gly				
gtg aac tgg tgt gag agg acc acc ctg agc aat ggc ggc tgc cag tat	665	670	675	2130
Val Asn Trp Cys Glu Arg Thr Thr Leu Ser Asn Gly Gly Cys Gln Tyr				
ctg tgc ctc cct gcc ccg cag atc aac ccc cac tcg ccc aag ttt acc	680	685	690	2178
Leu Cys Leu Pro Ala Pro Gln Ile Asn Pro His Ser Pro Lys Phe Thr				
tgc gcc tgc ccg gac ggc atg ctg ctg gcc agg gac atg agg agc tgc	700	705	710	2226
Cys Ala Cys Pro Asp Gly Met Leu Leu Ala Arg Asp Met Arg Ser Cys				
ctc aca gag gct gag gct gca gtg gcc acc cag gag aca tcc acc gtc				2274

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Leu Thr Glu Ala Glu Ala Ala Val Ala Thr Gln Glu Thr Ser Thr Val			
715	720	725	
agg cta aag gtc agc tcc aca gcc gta agg aca cag cac aca acc acc		2322	
Arg Leu Lys Val Ser Ser Thr Ala Val Arg Thr Gln His Thr Thr Thr			
730	735	740	
cgg cct gtt ccc gac acc tcc cgg ctg cct ggg gcc acc cct ggg ctc		2370	
Arg Pro Val Pro Asp Thr Ser Arg Leu Pro Gly Ala Thr Pro Gly Leu			
745	750	755	
acc acg gtg gag ata gtg aca atg tct cac caa gct ctg ggc gac gtt		2418	
Thr Thr Val Glu Ile Val Thr Met Ser His Gln Ala Leu Gly Asp Val			
760	765	770	775
gct ggc aga gga aat gag aag aag ccc agt agc gtg agg gct ctg tcc		2466	
Ala Gly Arg Gly Asn Glu Lys Lys Pro Ser Ser Val Arg Ala Leu Ser			
780	785	790	
att gtc ctc ccc atc gtg ctc ctc gtc ttc ctt tgc ctg ggg gtc ttc		2514	
Ile Val Leu Pro Ile Val Leu Leu Val Phe Leu Cys Leu Gly Val Phe			
795	800	805	
ctt cta tgg aag aac tgg cgg ctt aag aac atc aac agc atc aac ttt		2562	
Leu Leu Trp Lys Asn Trp Arg Leu Lys Asn Ile Asn Ser Ile Asn Phe			
810	815	820	
gac aac ccc gtc tat cag aag acc aca gag gat gag gtc cac att tgc		2610	
Asp Asn Pro Val Tyr Gln Lys Thr Thr Glu Asp Glu Val His Ile Cys			
825	830	835	
cac aac cag gac ggc tac agc tac ccc tcg aga cag atg gtc agt ctg		2658	
His Asn Gln Asp Gly Tyr Ser Tyr Pro Ser Arg Gln Met Val Ser Leu			
840	845	850	855
gag gat gac gtg gcg tga acatctgcct ggagtcccgccctgccccag		2706	
Glu Asp Asp Val Ala			
860			
aacccttcct gagacctcgc cggccttgtt ttattcaaag acagagaaga ccaaaggcatt		2766	
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tcttaaatg						5175

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<210> 28
<211> 860
<212> PRT
<213> Homo sapiens

<400> 28

Met Gly Pro Trp Gly Trp Lys Leu Arg Trp Thr Val Ala Leu Leu Leu
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Ala Ala Ala Gly Thr Ala Val Gly Asp Arg Cys Glu Arg Asn Glu Phe
20 25 30

Gln Cys Gln Asp Gly Lys Cys Ile Ser Tyr Lys Trp Val Cys Asp Gly
35 40 45

Ser Ala Glu Cys Gln Asp Gly Ser Asp Glu Ser Gln Glu Thr Cys Leu
50 55 60

Ser Val Thr Cys Lys Ser Gly Asp Phe Ser Cys Gly Gly Arg Val Asn
65 70 75 80

Arg Cys Ile Pro Gln Phe Trp Arg Cys Asp Gly Gln Val Asp Cys Asp
85 90 95

Asn Gly Ser Asp Glu Gln Gly Cys Pro Pro Lys Thr Cys Ser Gln Asp
100 105 110

Glu Phe Arg Cys His Asp Gly Lys Cys Ile Ser Arg Gln Phe Val Cys
115 120 125

Asp Ser Asp Arg Asp Cys Leu Asp Gly Ser Asp Glu Ala Ser Cys Pro
130 135 140

Val Leu Thr Cys Gly Pro Ala Ser Phe Gln Cys Asn Ser Ser Thr Cys
145 150 155 160

Ile Pro Gln Leu Trp Ala Cys Asp Asn Asp Pro Asp Cys Glu Asp Gly
165 170 175

Ser Asp Glu Trp Pro Gln Arg Cys Arg Gly Leu Tyr Val Phe Gln Gly
180 185 190

Asp Ser Ser Pro Cys Ser Ala Phe Glu Phe His Cys Leu Ser Gly Glu
195 200 205

Cys Ile His Ser Ser Trp Arg Cys Asp Gly Gly Pro Asp Cys Lys Asp
210 215 220

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Lys Ser Asp Glu Glu Asn Cys Ala Val Ala Thr Cys Arg Pro Asp Glu
225 230 235 240

Phe Gln Cys Ser Asp Gly Asn Cys Ile His Gly Ser Arg Gln Cys Asp
245 250 255

Arg Glu Tyr Asp Cys Lys Asp Met Ser Asp Glu Val Gly Cys Val Asn
260 265 270

Val Thr Leu Cys Glu Gly Pro Asn Lys Phe Lys Cys His Ser Gly Glu
275 280 285

Cys Ile Thr Leu Asp Lys Val Cys Asn Met Ala Arg Asp Cys Arg Asp
290 295 300

Trp Ser Asp Glu Pro Ile Lys Glu Cys Gly Thr Asn Glu Cys Leu Asp
305 310 315 320

Asn Asn Gly Gly Cys Ser His Val Cys Asn Asp Leu Lys Ile Gly Tyr
325 330 335

Glu Cys Leu Cys Pro Asp Gly Phe Gln Leu Val Ala Gln Arg Arg Cys
340 345 350

Glu Asp Ile Asp Glu Cys Gln Asp Pro Asp Thr Cys Ser Gln Leu Cys
355 360 365

Val Asn Leu Glu Gly Gly Tyr Lys Cys Gln Cys Glu Glu Gly Phe Gln
370 375 380

Leu Asp Pro His Thr Lys Ala Cys Lys Ala Val Gly Ser Ile Ala Tyr
385 390 395 400

Leu Phe Phe Thr Asn Arg His Glu Val Arg Lys Met Thr Leu Asp Arg
405 410 415

Ser Glu Tyr Thr Ser Leu Ile Pro Asn Leu Arg Asn Val Val Ala Leu
420 425 430

Asp Thr Glu Val Ala Ser Asn Arg Ile Tyr Trp Ser Asp Leu Ser Gln
435 440 445

Arg Met Ile Cys Ser Thr Gln Leu Asp Arg Ala His Gly Val Ser Ser
450 455 460

Tyr Asp Thr Val Ile Ser Arg Asp Ile Gln Ala Pro Asp Gly Leu Ala

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465

470

475

480

Val Asp Trp Ile His Ser Asn Ile Tyr Trp Thr Asp Ser Val Leu Gly
485 490 495

Thr Val Ser Val Ala Asp Thr Lys Gly Val Lys Arg Lys Thr Leu Phe
500 505 510

Arg Glu Asn Gly Ser Lys Pro Arg Ala Ile Val Val Asp Pro Val His
515 520 525

Gly Phe Met Tyr Trp Thr Asp Trp Gly Thr Pro Ala Lys Ile Lys Lys
530 535 540

Gly Gly Leu Asn Gly Val Asp Ile Tyr Ser Leu Val Thr Glu Asn Ile
545 550 560

Gln Trp Pro Asn Gly Ile Thr Leu Asp Leu Leu Ser Gly Arg Leu Tyr
565 570 575

Trp Val Asp Ser Lys Leu His Ser Ile Ser Ser Ile Asp Val Asn Gly
580 585 590

Gly Asn Arg Lys Thr Ile Leu Glu Asp Glu Lys Arg Leu Ala His Pro
595 600 605

Phe Ser Leu Ala Val Phe Glu Asp Lys Val Phe Trp Thr Asp Ile Ile
610 615 620

Asn Glu Ala Ile Phe Ser Ala Asn Arg Leu Thr Gly Ser Asp Val Asn
625 630 635 640

Leu Leu Ala Glu Asn Leu Leu Ser Pro Glu Asp Met Val Leu Phe His
645 650 655

Asn Leu Thr Gln Pro Arg Gly Val Asn Trp Cys Glu Arg Thr Thr Leu
660 665 670

Ser Asn Gly Gly Cys Gln Tyr Leu Cys Leu Pro Ala Pro Gln Ile Asn
675 680 685

Pro His Ser Pro Lys Phe Thr Cys Ala Cys Pro Asp Gly Met Leu Leu
690 695 700

Ala Arg Asp Met Arg Ser Cys Leu Thr Glu Ala Glu Ala Ala Val Ala
705 710 715 720

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Thr Gln Glu Thr Ser Thr Val Arg Leu Lys Val Ser Ser Thr Ala Val
725 730 735

Arg Thr Gln His Thr Thr Arg Pro Val Pro Asp Thr Ser Arg Leu
740 745 750

Pro Gly Ala Thr Pro Gly Leu Thr Thr Val Glu Ile Val Thr Met Ser
755 760 765

His Gln Ala Leu Gly Asp Val Ala Gly Arg Gly Asn Glu Lys Lys Pro
770 775 780

Ser Ser Val Arg Ala Leu Ser Ile Val Leu Pro Ile Val Leu Leu Val
785 790 795 800

Phe Leu Cys Leu Gly Val Phe Leu Leu Trp Lys Asn Trp Arg Leu Lys
805 810 815

Asn Ile Asn Ser Ile Asn Phe Asp Asn Pro Val Tyr Gln Lys Thr Thr
820 825 830

Glu Asp Glu Val His Ile Cys His Asn Gln Asp Gly Tyr Ser Tyr Pro
835 840 845

Ser Arg Gln Met Val Ser Leu Glu Asp Asp Val Ala
850 855 860

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tacagagatg ggaaagactg ggaatctaag cagatgccac agtacgagg gagaactgag		420
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tcggacatcg gcctgttatgg gtgctgggttc agttcccaaga ttacatgtga ggaggccacc		540
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Tyr Asp Arg Phe Val Leu Tyr Lys Glu Gly Glu Arg Asp Phe Leu Gln	
250 255 260 265	
cgc cct ggt tgg cag ccc cag gct ggg ctc tcc cag gcc aac ttc acc	930
Arg Pro Gly Trp Gln Pro Gln Ala Gly Leu Ser Gln Ala Asn Phe Thr	
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ctg ggc cct gtg agc ccc tcc cac ggg ggc cag tac aga tgc tac agt	978
Leu Gly Pro Val Ser Pro Ser His Gly Gly Gln Tyr Arg Cys Tyr Ser	
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Ala His Asn Leu Ser Ser Glu Trp Ser Ala Pro Ser Asp Pro Leu Asp	
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Ile Leu Ile Thr Gly Gln Phe Tyr Asp Arg Pro Ser Leu Ser Val Gln	
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ccg gtc ccc aca gta gcc cca gga aag aac gtg acc ctg ctg tgt cag	1122
Pro Val Pro Thr Val Ala Pro Gly Lys Asn Val Thr Leu Leu Cys Gln	
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tca cgg ggg cag ttc cac act ttc ctt ctg acc aag gag ggg gca ggc	1170
Ser Arg Gly Gln Phe His Thr Phe Leu Leu Thr Lys Glu Gly Ala Gly	
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Ala Glu Phe Arg Met Gly Pro Val Thr Ser Ala His Val Gly Thr Tyr	
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Arg Cys Tyr Ser Ser Leu Ser Asn Pro Tyr Leu Leu Ser Leu Pro	
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Ser Asp Pro Leu Glu Leu Val Val Ser Ala Ser Leu Gly Gln His Pro	
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Gln Asp Tyr Thr Val Glu Asn Leu Ile Arg Met Gly Val Ala Gly Leu	
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Val Leu Val Val Leu Gly Ile Leu Leu Phe Glu Ala Gln His Ser Gln	
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aga agc cta caa gat gca gcc ggg agg tga acagcagaga ggacaatgca	1508
Arg Ser Leu Gln Asp Ala Ala Gly Arg	
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aatctaggac ctacattatc tggactgtat gctggtcatt tctagagaca gcaatcaata 1628
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Ala Glu Pro Gly Ser Val Ile Ile Gln Gly Ser Pro Val Thr Leu Arg
35 40 45

Cys Gln Gly Ser Leu Gln Ala Glu Glu Tyr His Leu Tyr Arg Glu Asn
50 55 60

Lys Ser Ala Ser Trp Val Arg Arg Ile Gln Glu Pro Gly Lys Asn Gly
65 70 75 80

Gln Phe Pro Ile Pro Ser Ile Thr Trp Glu His Ala Gly Arg Tyr His
85 90 95

Cys Gln Tyr Tyr Ser His Asn His Ser Ser Glu Tyr Ser Asp Pro Leu
100 105 110

Glu Leu Val Val Thr Gly Ala Tyr Ser Lys Pro Thr Leu Ser Ala Leu
115 120 125

Pro Ser Pro Val Val Thr Leu Gly Gly Asn Val Thr Leu Gln Cys Val
130 135 140

Ser Gln Val Ala Phe Asp Gly Phe Ile Leu Cys Lys Glu Gly Glu Asp
145 150 155 160

Glu His Pro Gln Arg Leu Asn Ser His Ser His Ala Arg Gly Trp Ser
165 170 175

Trp Ala Ile Phe Ser Val Gly Pro Val Ser Pro Ser Arg Arg Trp Ser
180 185 190

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Tyr Arg Cys Tyr Ala Tyr Asp Ser Asn Ser Pro Tyr Val Trp Ser Leu
195 200 205

Pro Ser Asp Leu Leu Glu Leu Leu Val Pro Gly Val Ser Lys Lys Pro
210 215 220

Ser Leu Ser Val Gln Pro Gly Pro Met Val Ala Pro Gly Glu Ser Leu
225 230 235 240

Thr Leu Gln Cys Val Ser Asp Val Gly Tyr Asp Arg Phe Val Leu Tyr
245 250 255

Lys Glu Gly Glu Arg Asp Phe Leu Gln Arg Pro Gly Trp Gln Pro Gln
260 265 270

Ala Gly Leu Ser Gln Ala Asn Phe Thr Leu Gly Pro Val Ser Pro Ser
275 280 285

His Gly Gly Gln Tyr Arg Cys Tyr Ser Ala His Asn Leu Ser Ser Glu
290 295 300

Trp Ser Ala Pro Ser Asp Pro Leu Asp Ile Leu Ile Thr Gly Gln Phe
305 310 315 320

Tyr Asp Arg Pro Ser Leu Ser Val Gln Pro Val Pro Thr Val Ala Pro
325 330 335

Gly Lys Asn Val Thr Leu Leu Cys Gln Ser Arg Gly Gln Phe His Thr
340 345 350

Phe Leu Leu Thr Lys Glu Gly Ala Gly His Pro Pro Leu His Leu Arg
355 360 365

Ser Glu His Gln Ala Gln Gln Asn Gln Ala Glu Phe Arg Met Gly Pro
370 375 380

Val Thr Ser Ala His Val Gly Thr Tyr Arg Cys Tyr Ser Ser Leu Ser
385 390 395 400

Ser Asn Pro Tyr Leu Leu Ser Leu Pro Ser Asp Pro Leu Glu Leu Val
405 410 415

Val Ser Ala Ser Leu Gly Gln His Pro Gln Asp Tyr Thr Val Glu Asn
420 425 430

Leu Ile Arg Met Gly Val Ala Gly Leu Val Leu Val Val Leu Gly Ile

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435

440

445

Leu Leu Phe Glu Ala Gln His Ser Gln Arg Ser Leu Gln Asp Ala Ala
450 455 460

Gly Arg
465